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FIG.1

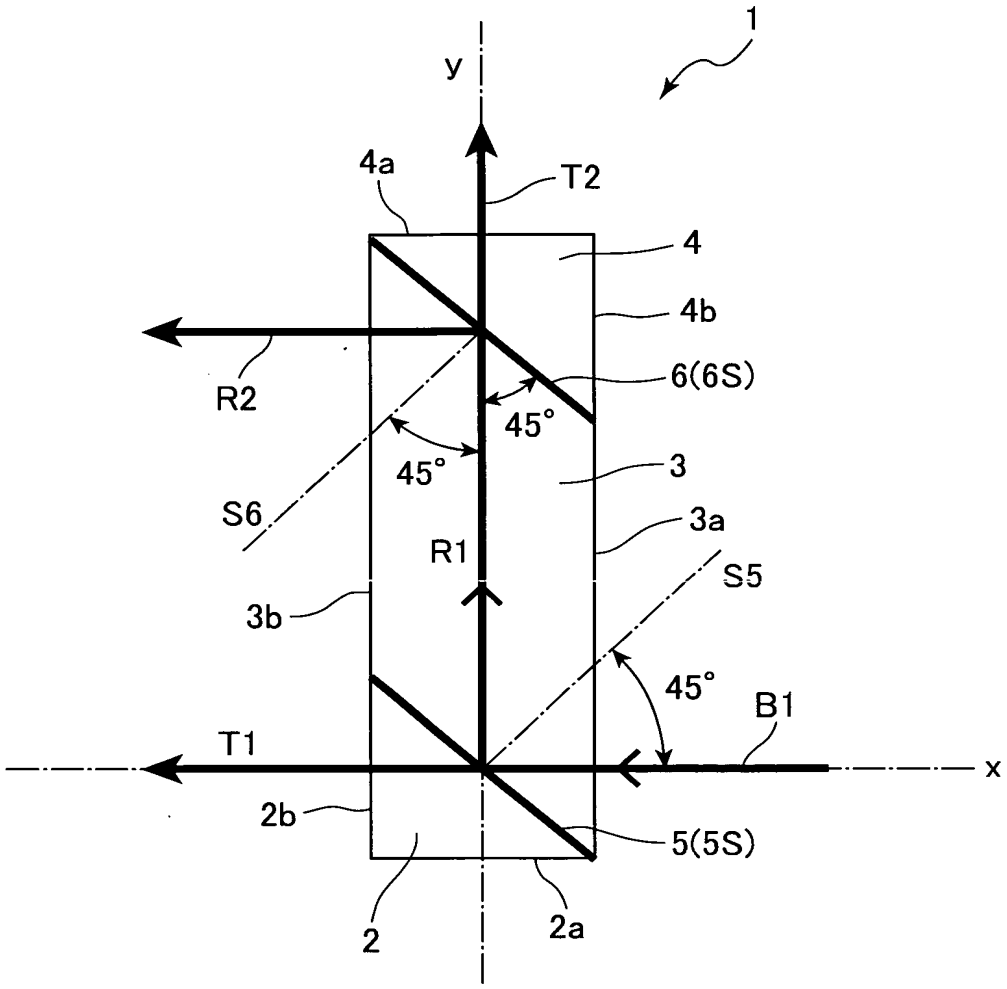

FIG.2

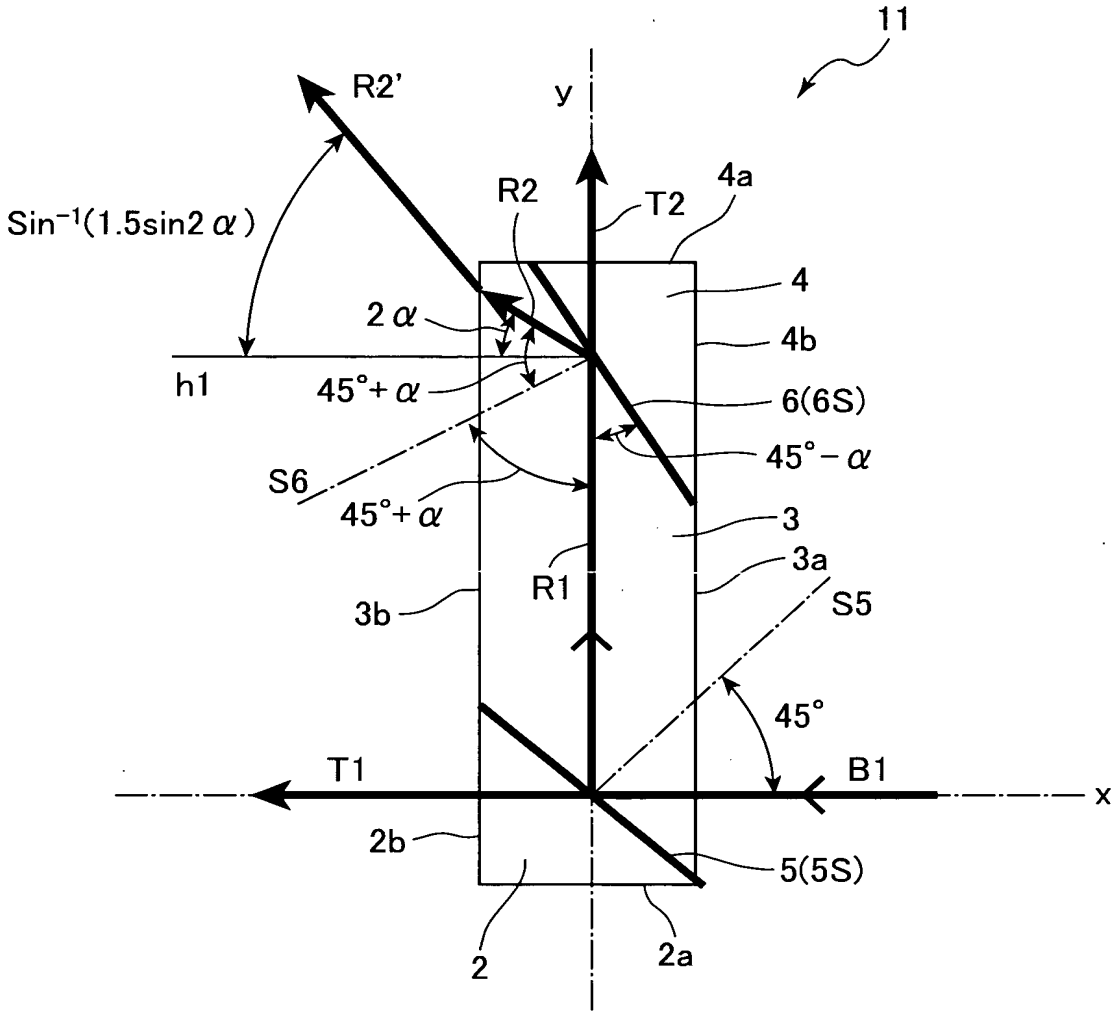
11
R2'
y
Sin⁻¹(1.5sin2 α)
R2
T2
4a
4
2 α
4b
h1
45°+ α
6(6S)
45°− α
S6
45°+ α
3
3a
R1
S5
3b
45°
T1
B1
x
2b
5(5S)
2
2a

FIG.3

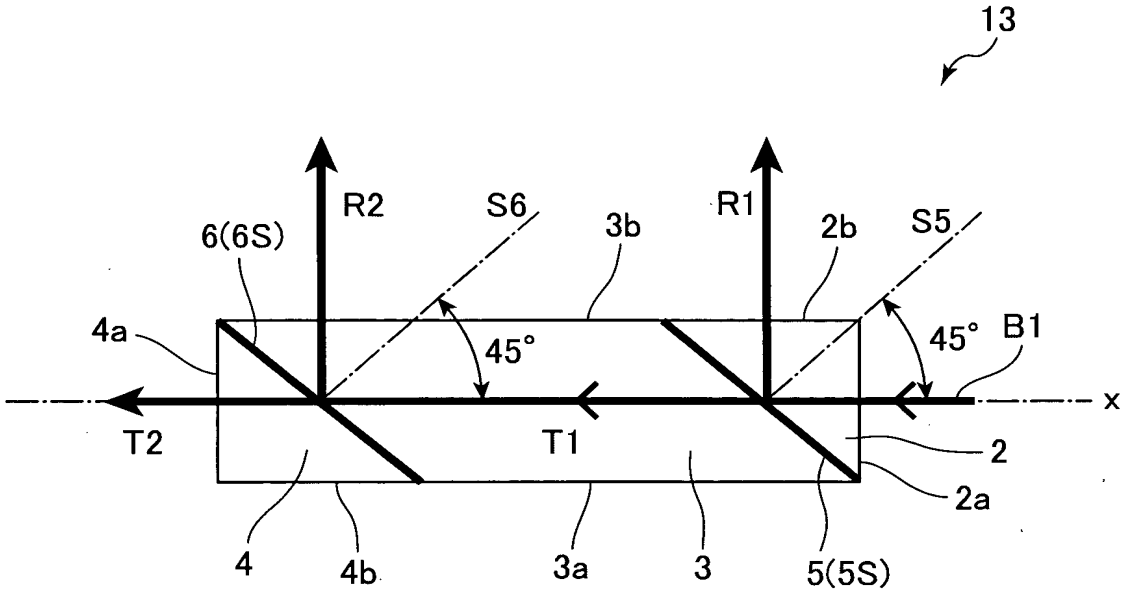
13
R2
S6
3b
R1
2b
S5
6(6S)
4a
45°
45°
B1
x
T2
T1
2
2a
4
4b
3a
3
5(5S)

FIG.4

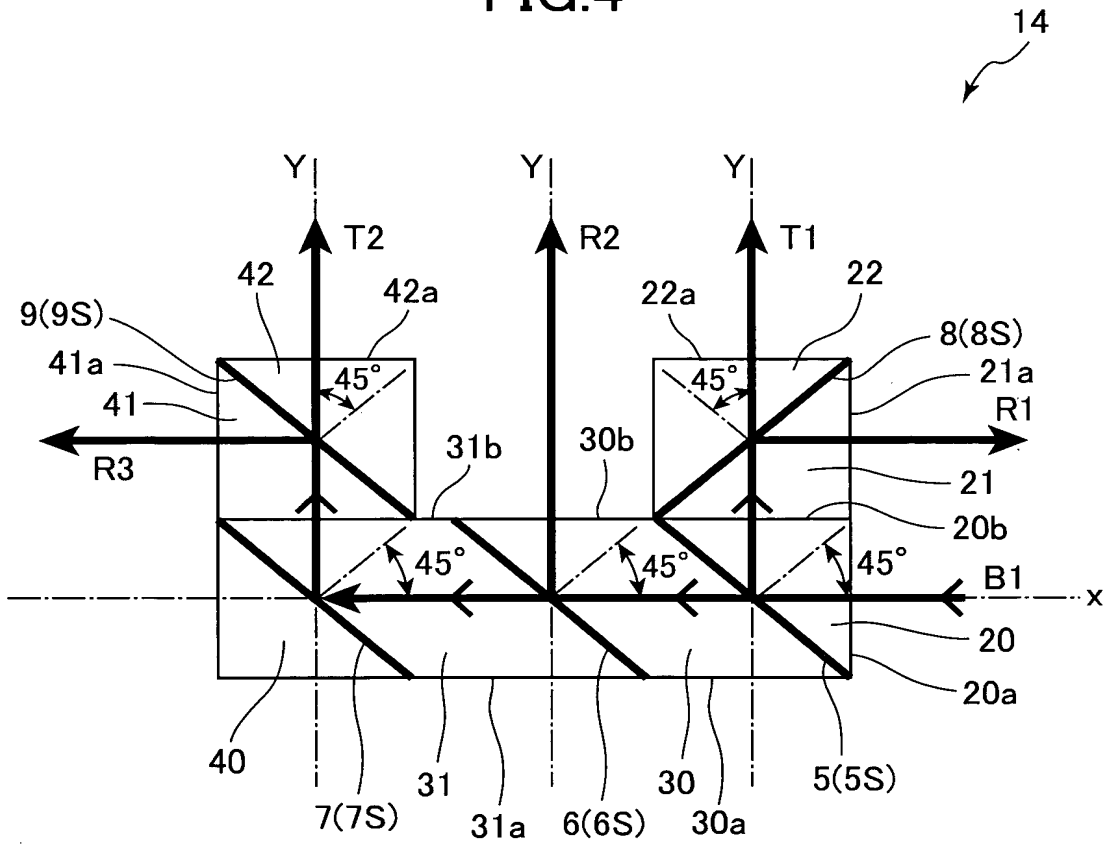
14
Y
Y
Y
T2
R2
T1
42
42a
22a
22
9(9S)
8(8S)
41a
45°
45°
21a
41
R1
R3
31b
30b
21
20b
45°
45°
45°
B1
x
20
20a
40
31
30
5(5S)
7(7S)
31a
6(6S)
30a

FIG.5

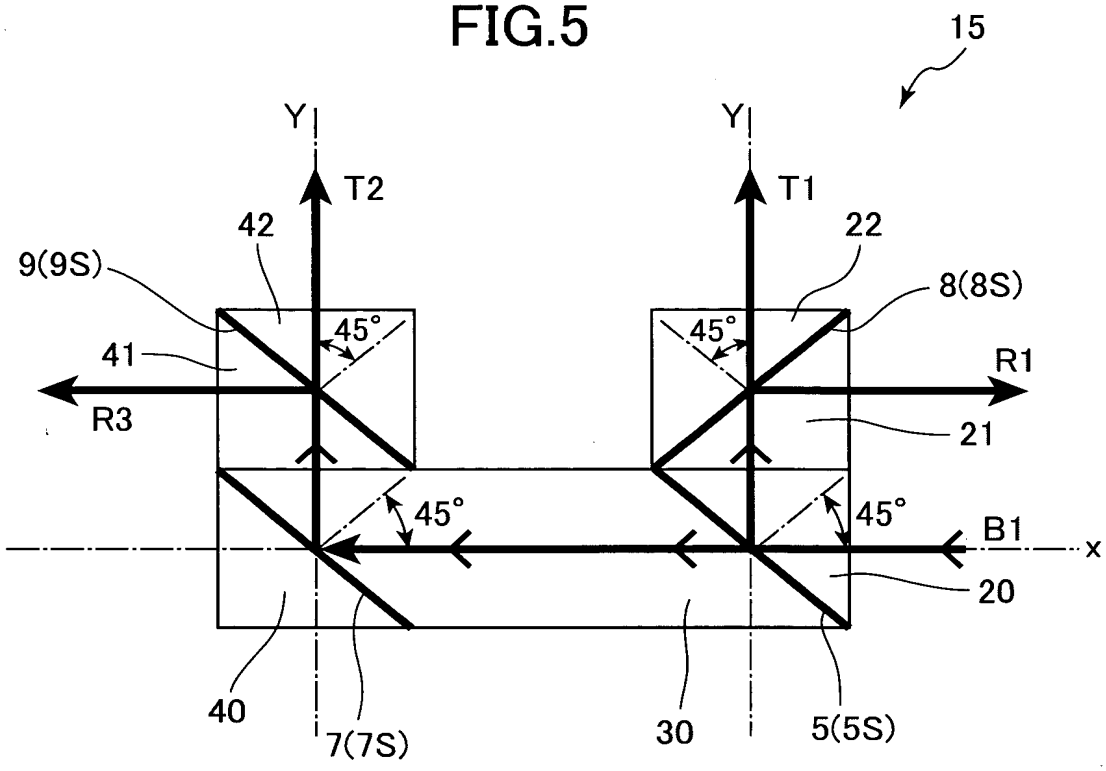
15
Y
T2
42
9(9S)
41
R3
45°
45°
Y
T1
22
8(8S)
R1
21
45°
45°
B1
x
20
40
7(7S)
30
5(5S)

FIG.6

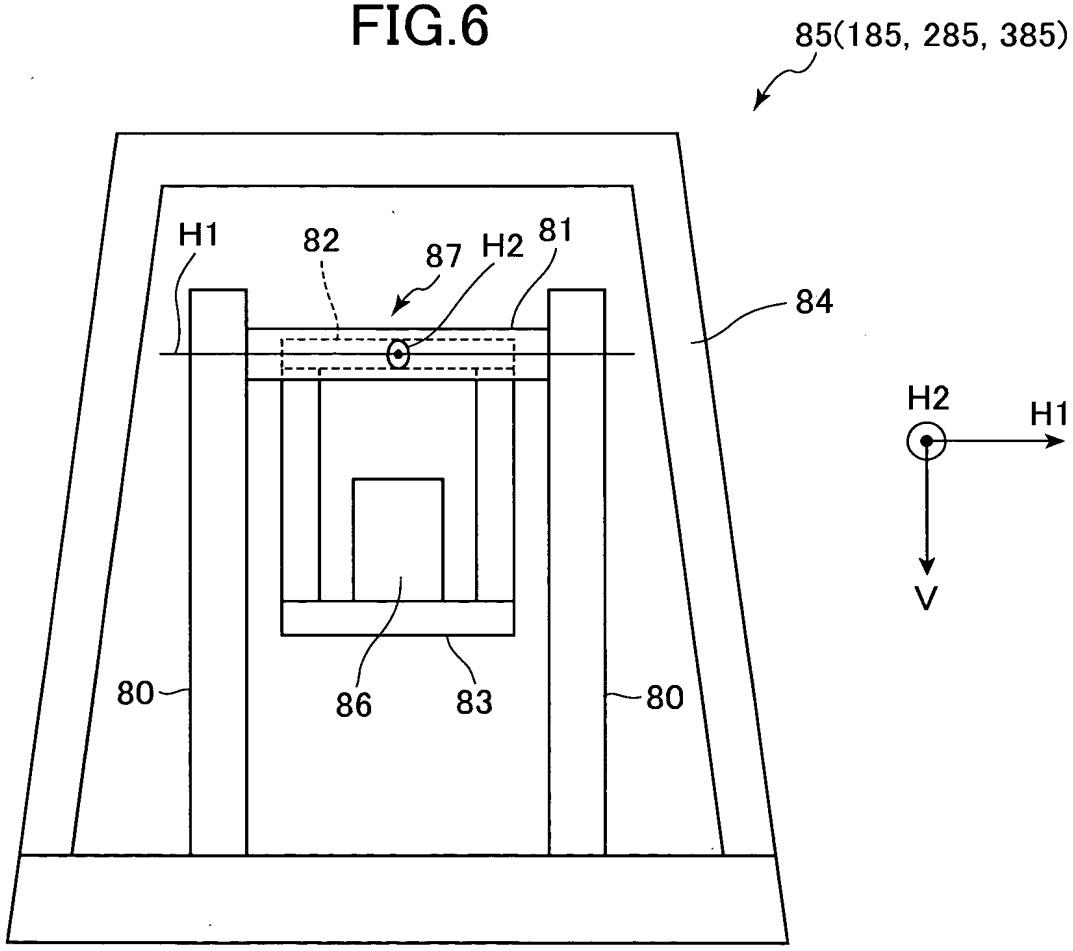
85(185, 285, 385)
H1
82
87
H2
81
84
80
86
83
80
H2
H1
V

FIG.7

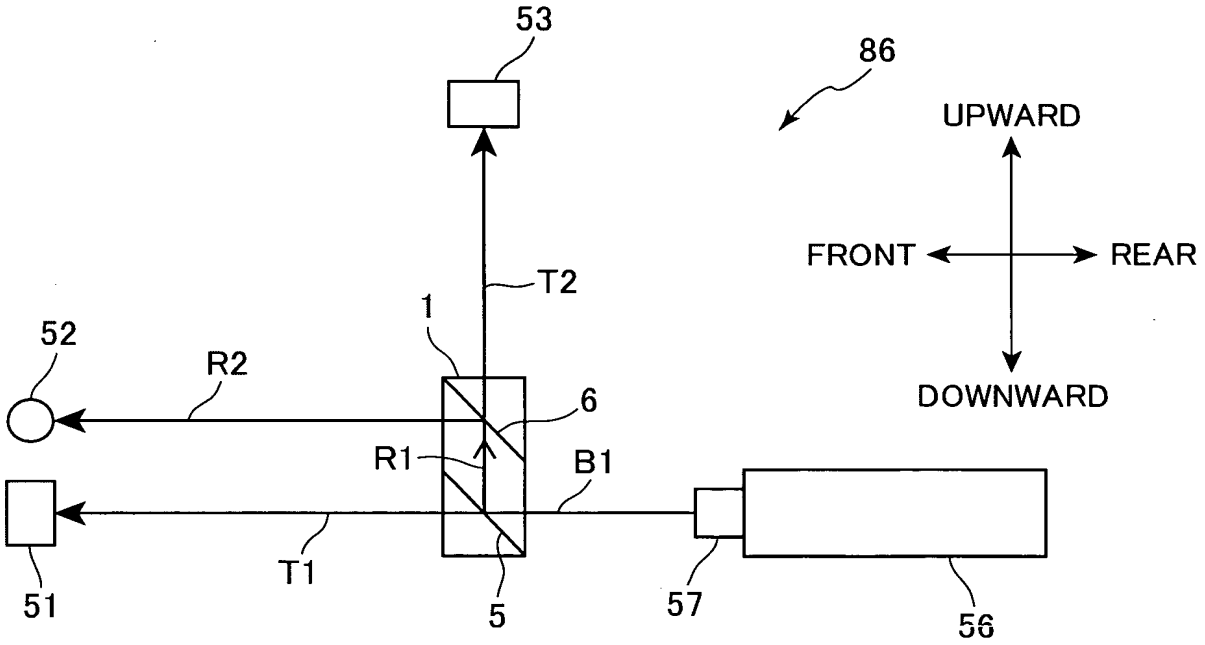
53
86
UPWARD
FRONT
REAR
DOWNWARD
T2
1
52
R2
6
R1
B1
T1
51
5
57
56

FIG.8

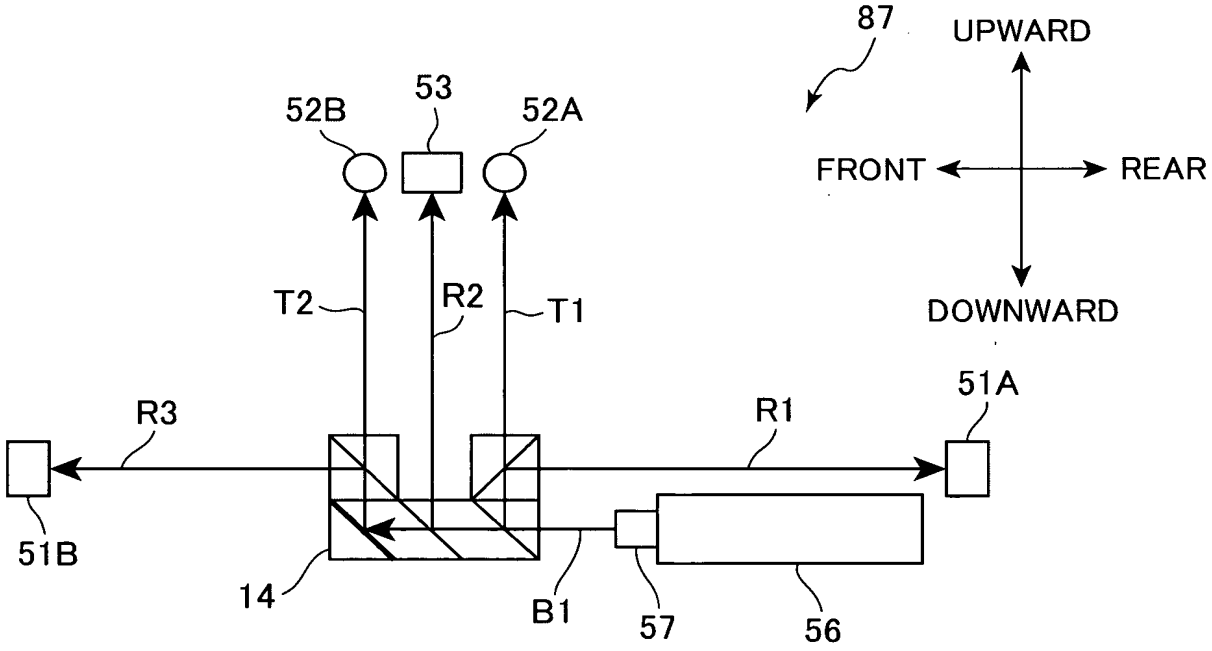
87
UPWARD
52B
53
52A
FRONT
REAR
DOWNWARD
T2
R2
T1
51A
R3
R1
51B
14
B1
57
56

FIG.9

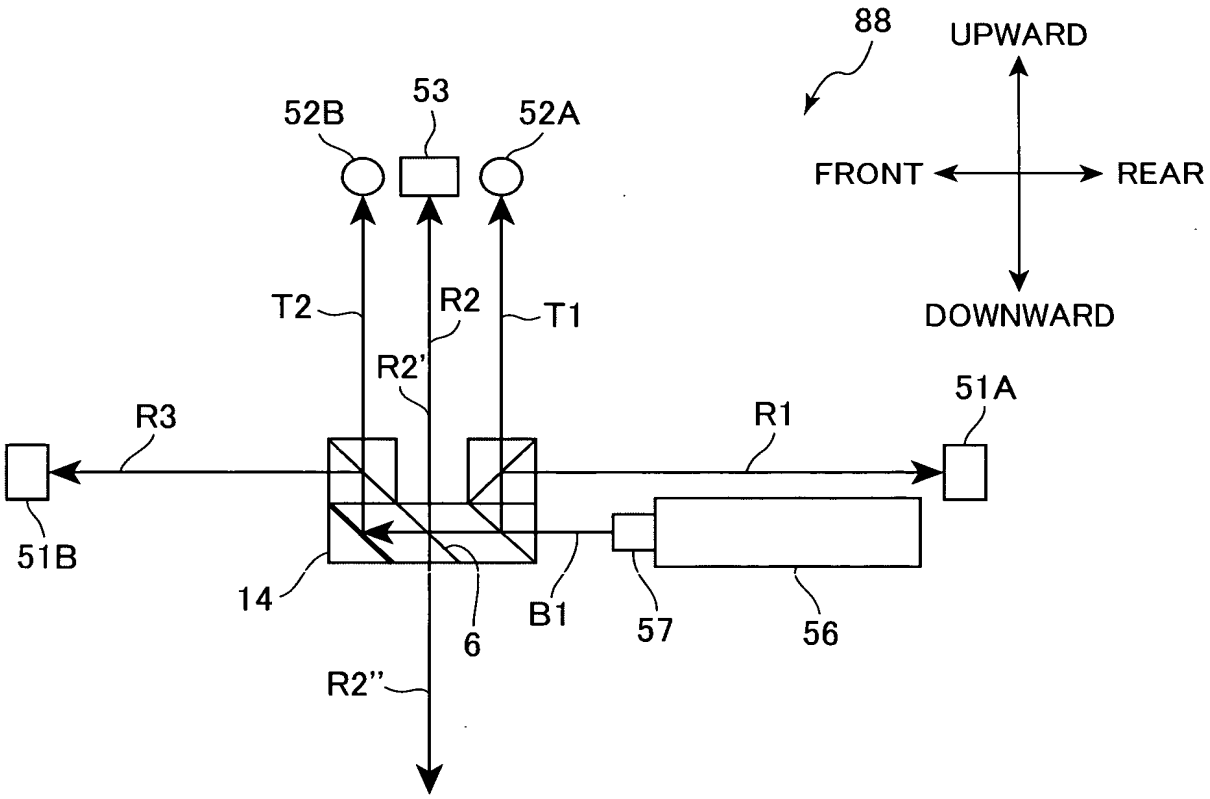
88
UPWARD
FRONT
REAR
DOWNWARD
52B
53
52A
T2
R2
T1
R2'
R3
R1
51A
51B
14
6
B1
57
56
R2''

FIG.10

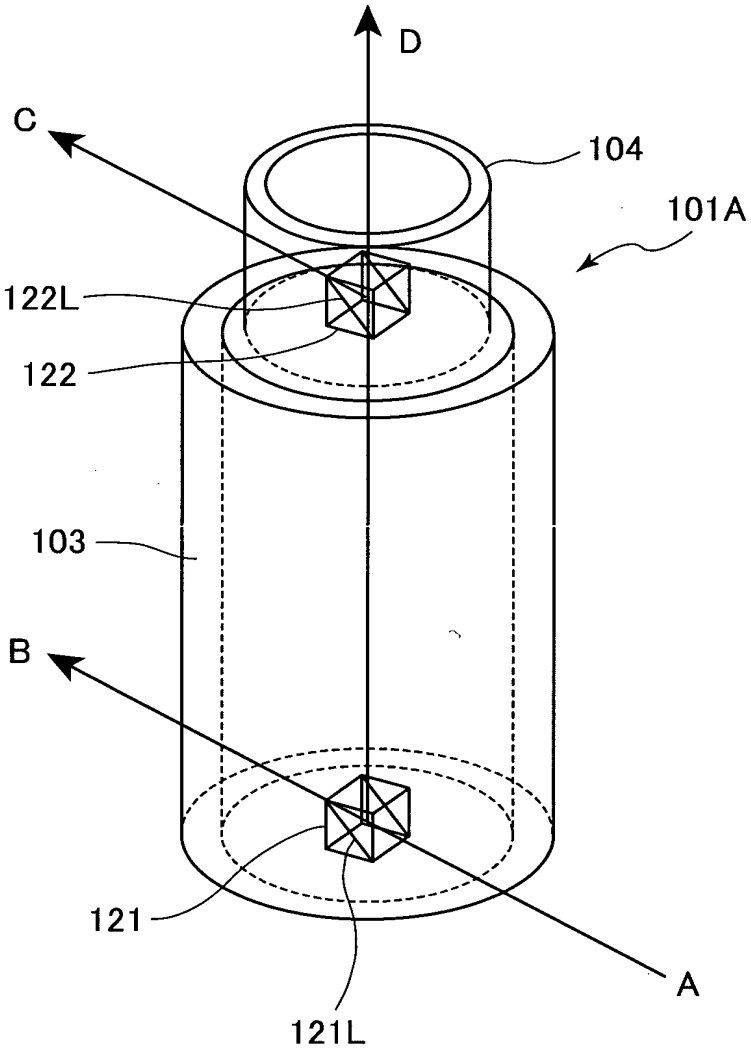

FIG.11

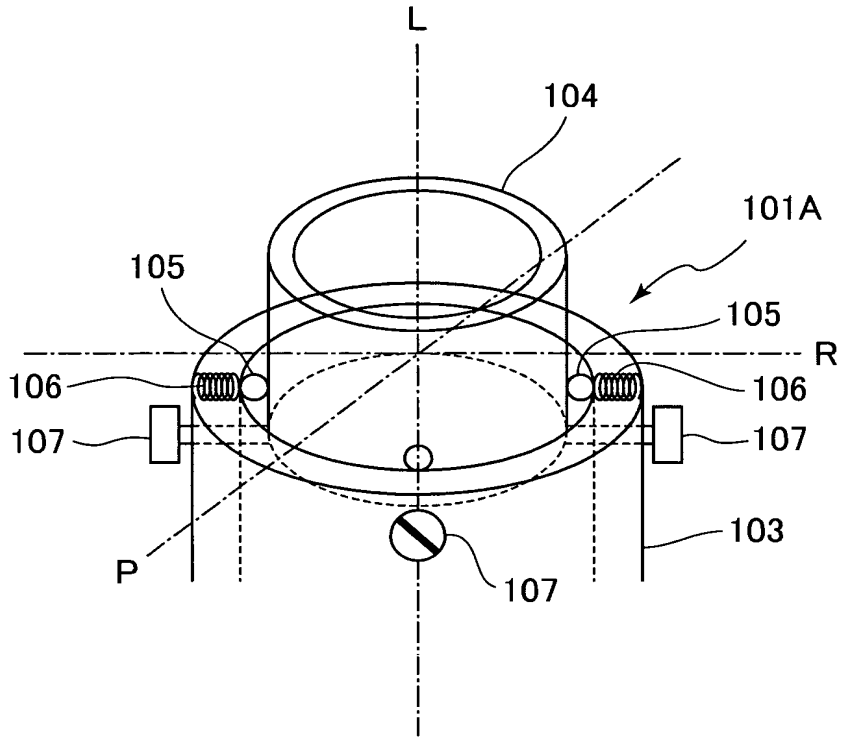
L
104
101A
105
105
R
106
106
107
107
103
P
107

FIG.12

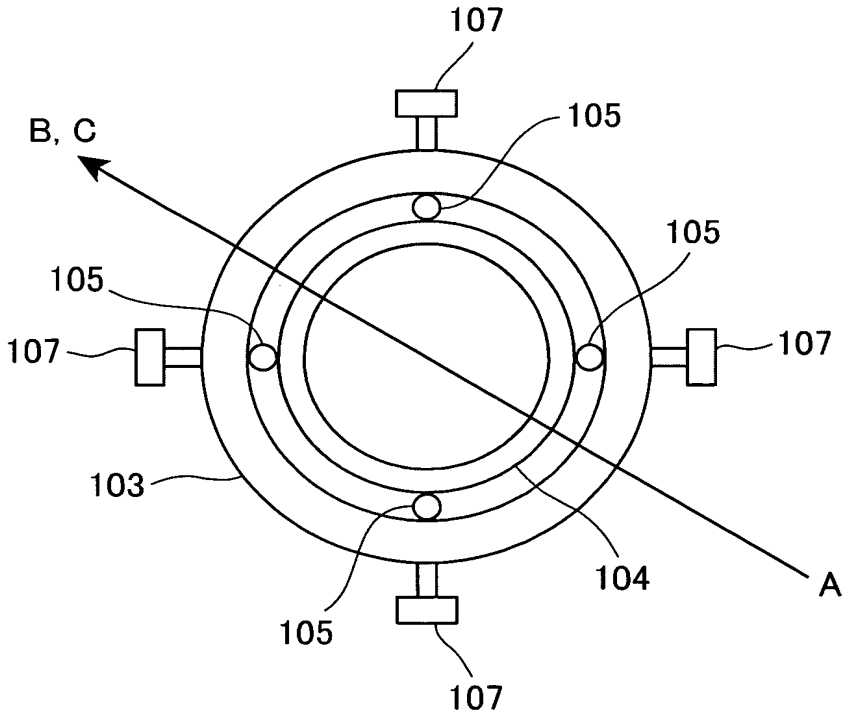
107
B, C
105
105
105
107
107
103
104
A
105
107

FIG.13

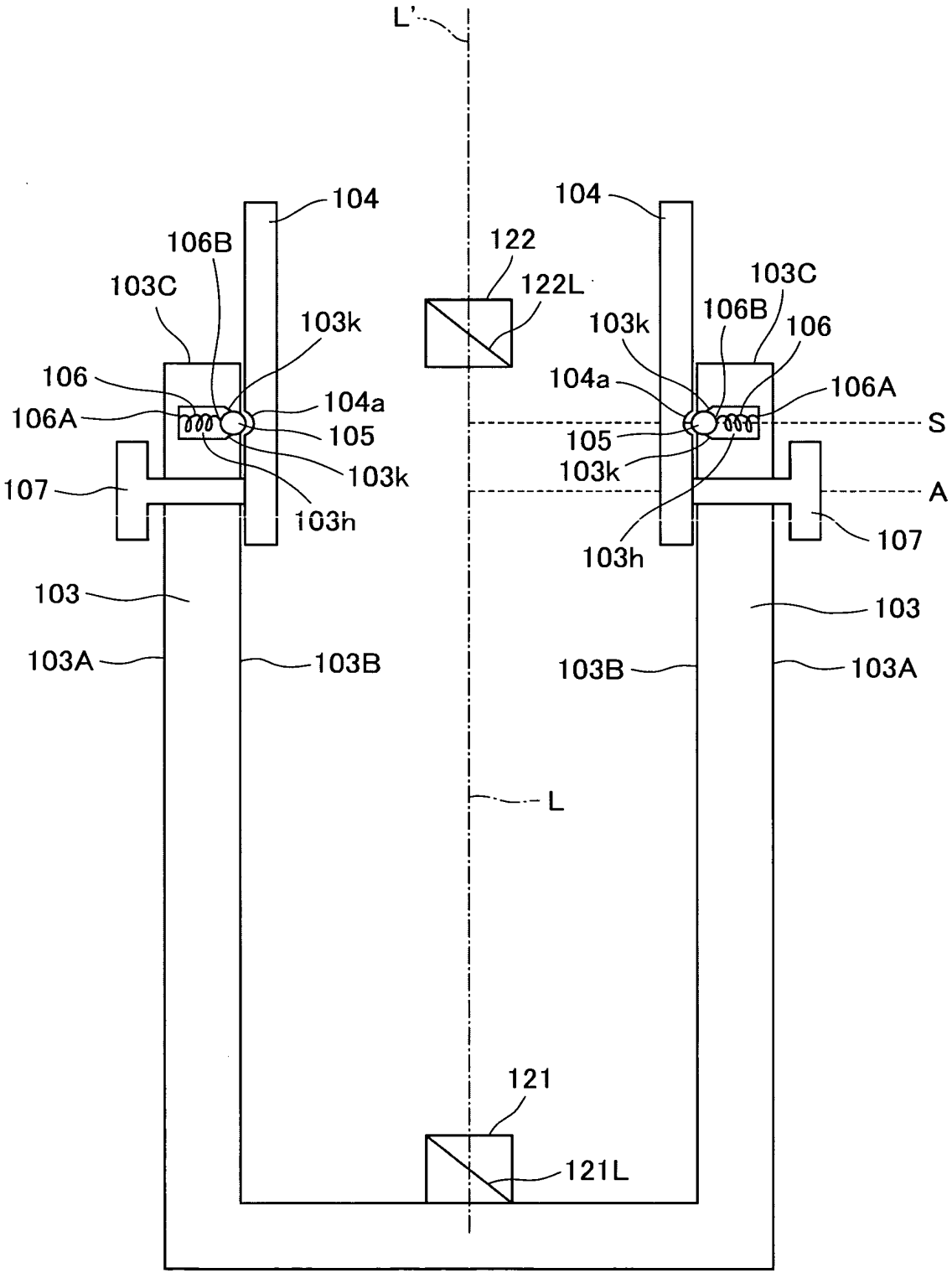
L'
104
106B
103C
103k
106
106A
104a
105
103k
107
103h
103
103A
103B
122
122L
L
121
121L
104
103C
106B
106
103k
104a
106A
S
105
103k
A
103h
107
103
103B
103A

FIG.14

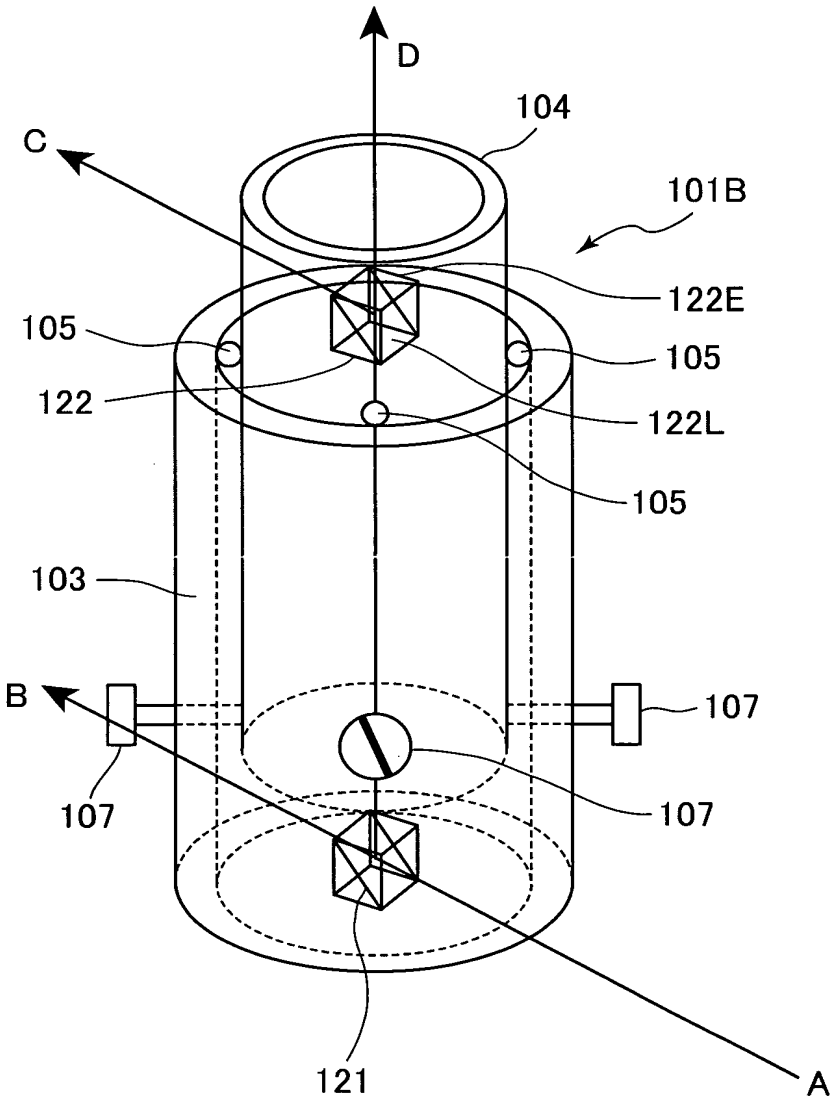

FIG.15

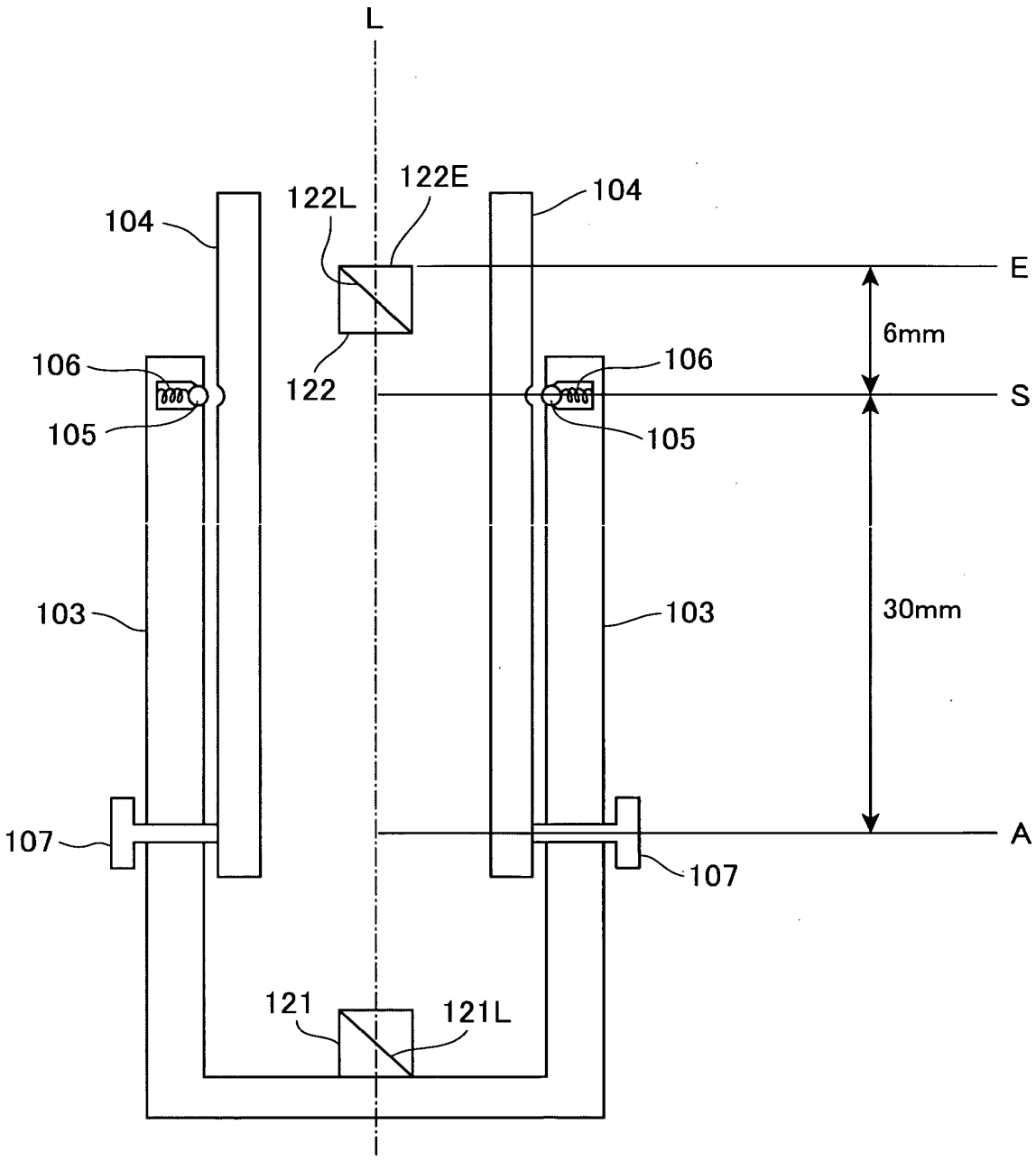
L
104
122L
122E
104
E
6mm
106
122
106
S
105
105
103
103
30mm
107
A
107
121
121L

FIG.16

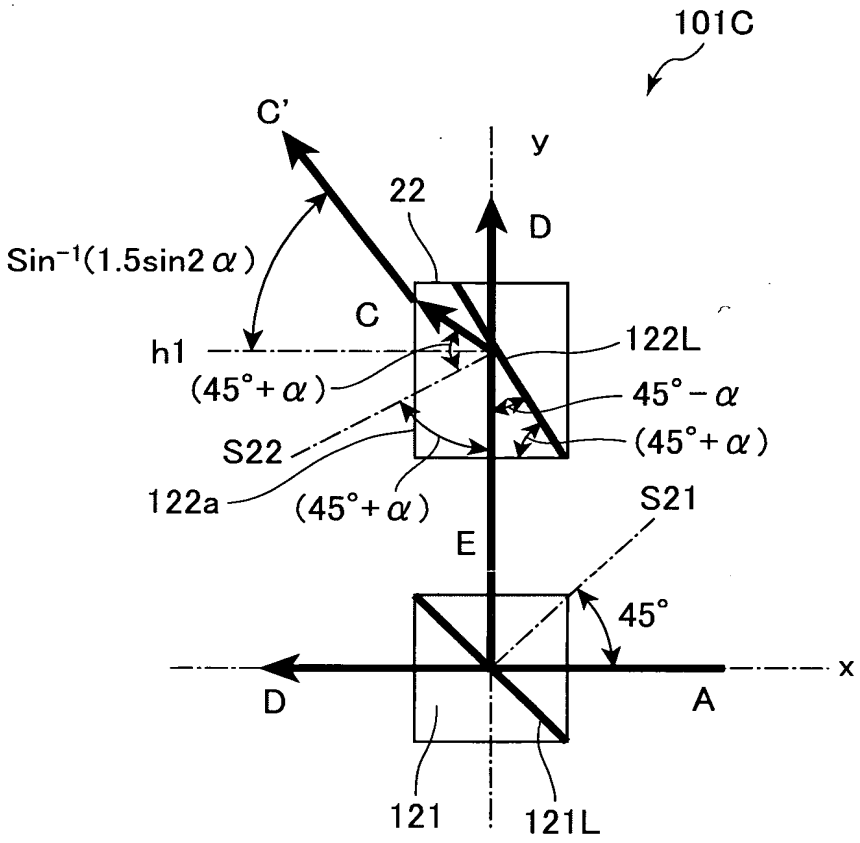
101C
C'
y
22
D
Sin⁻¹(1.5sin2α)
C
h1
122L
(45°+α)
45°−α
S22
(45°+α)
122a
(45°+α)
S21
E
45°
x
D
A
121
121L

FIG.17

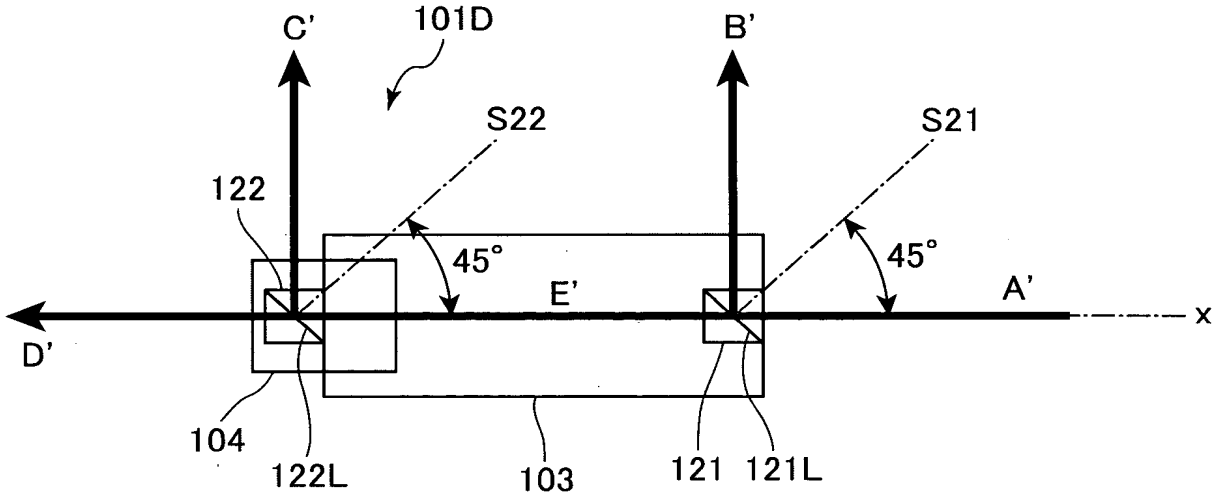
C'
101D
B'
S22
S21
122
45°
45°
E'
A'
x
D'
104
122L
103
121
121L

FIG.18

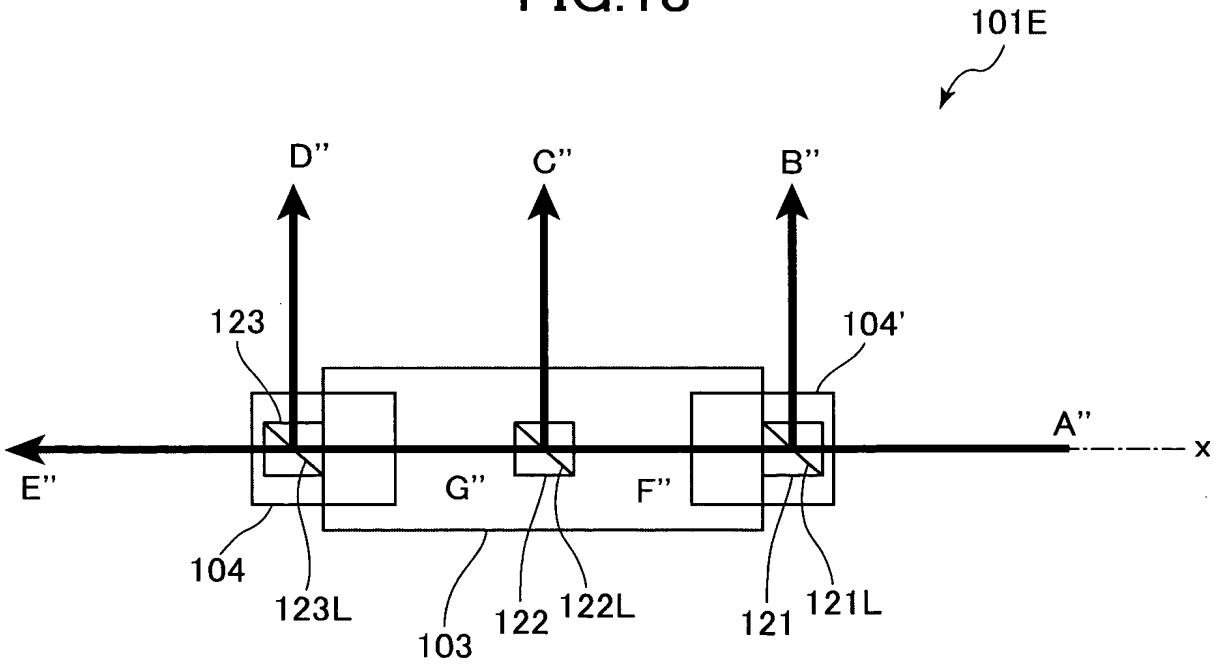
101E
D"
C"
B"
123
104'
A"
x
E"
G"
F"
104
123L
103
122
122L
121
121L

FIG.19

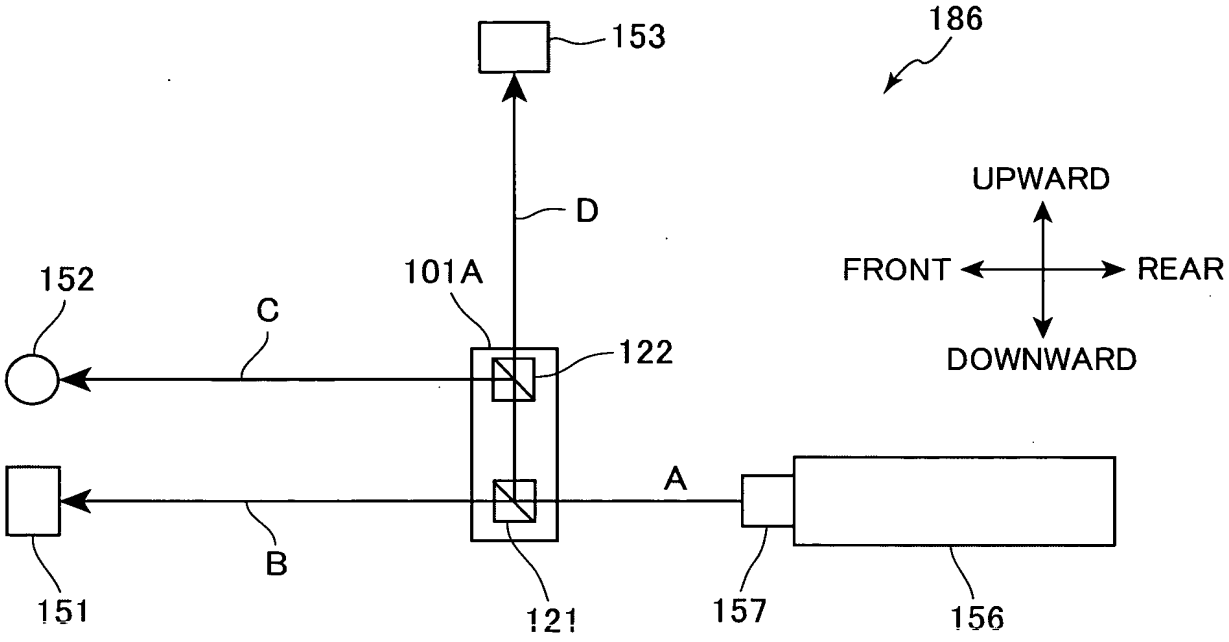
153
186
UPWARD
D
FRONT
REAR
152
101A
C
122
DOWNWARD
A
B
151
121
157
156

FIG.20

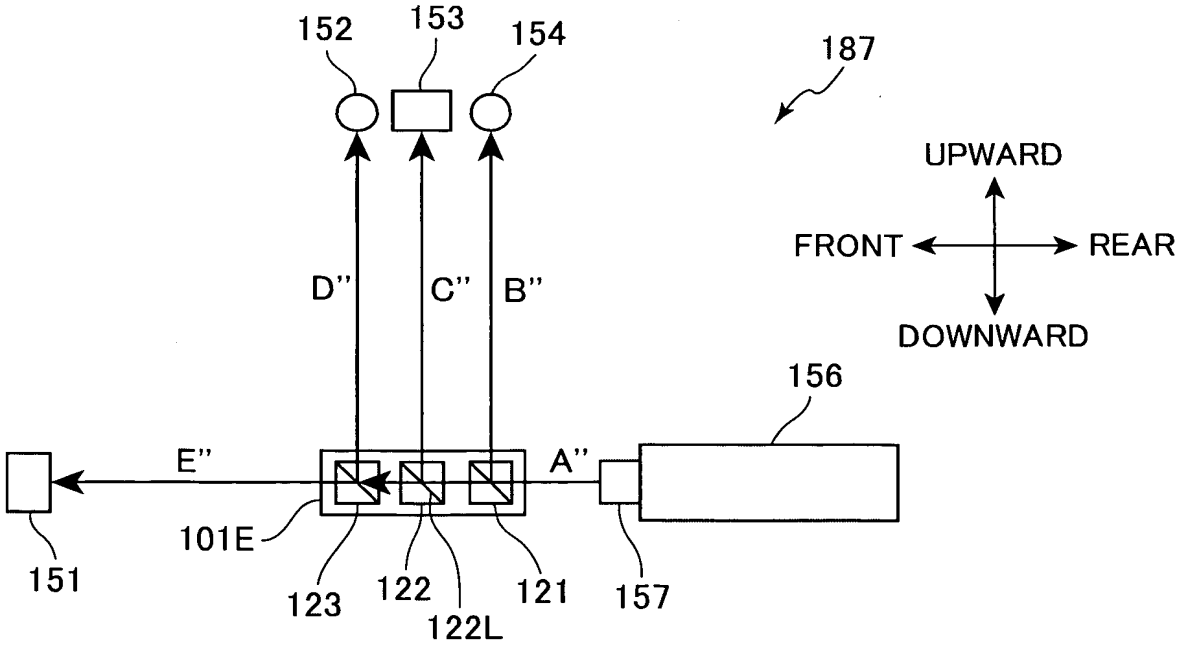
152
153
154
187
UPWARD
FRONT
REAR
D"
C"
B"
DOWNWARD
156
E"
A"
101E
151
123
122
121
157
122L

FIG.21

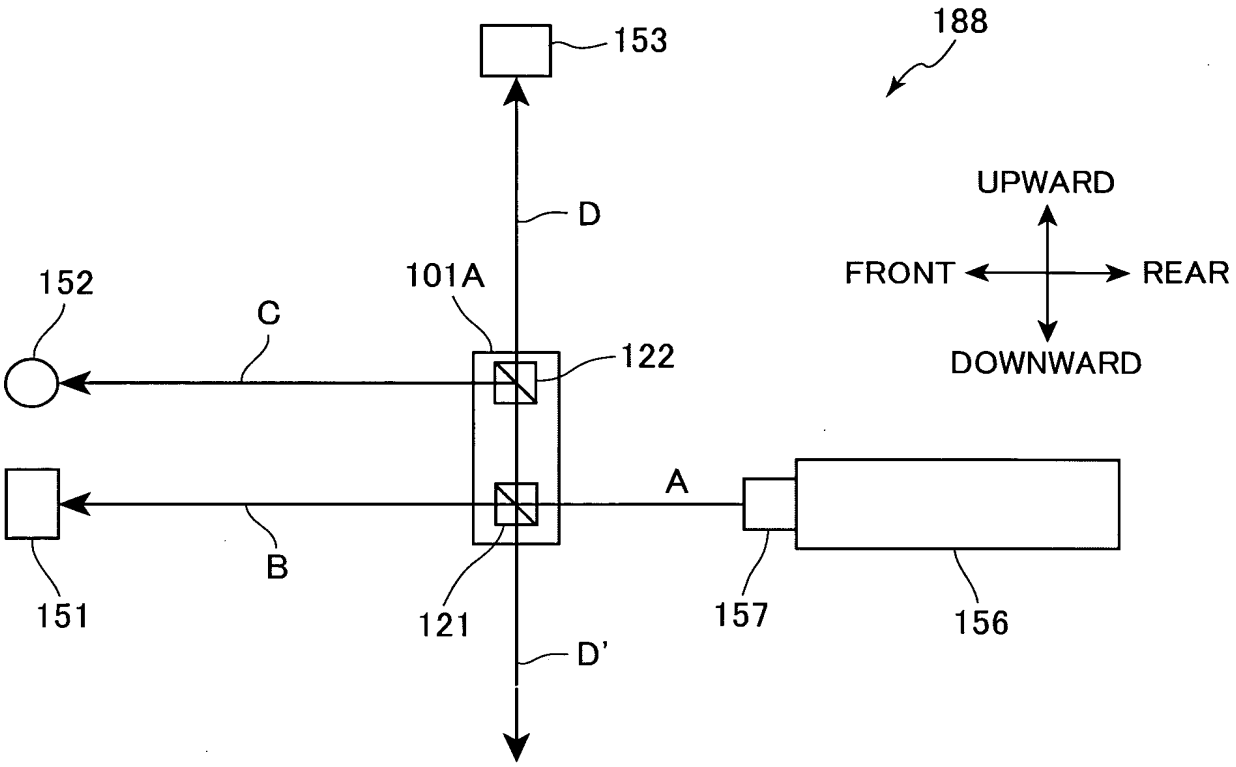
153
188
UPWARD
D
FRONT
REAR
152
101A
C
122
DOWNWARD
A
B
151
121
157
156
D'

FIG.22

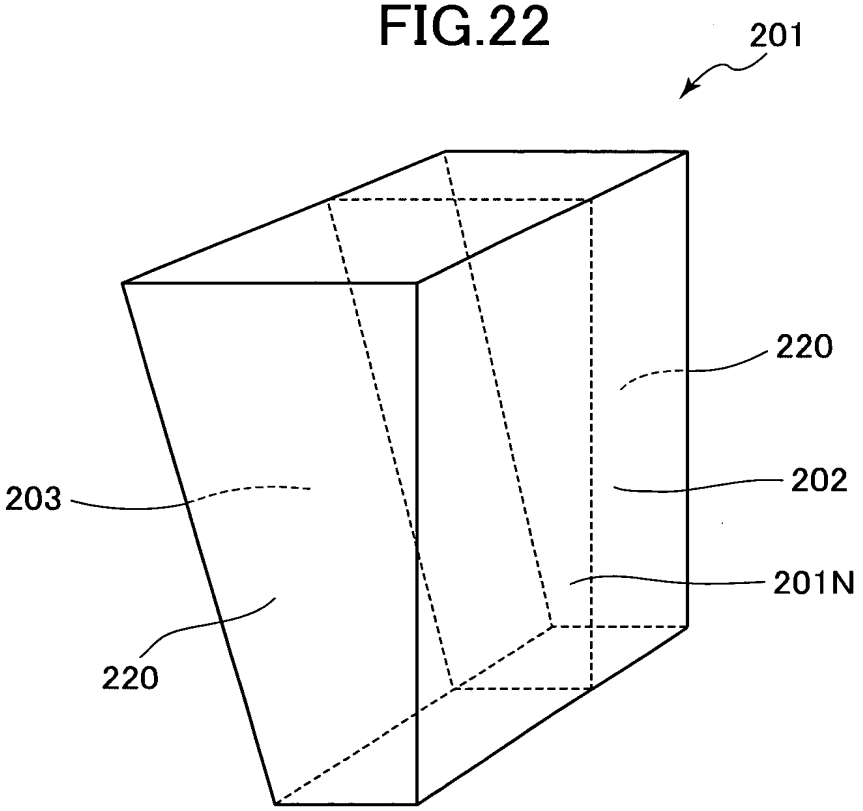
201
220
203
202
201N
220

FIG.23

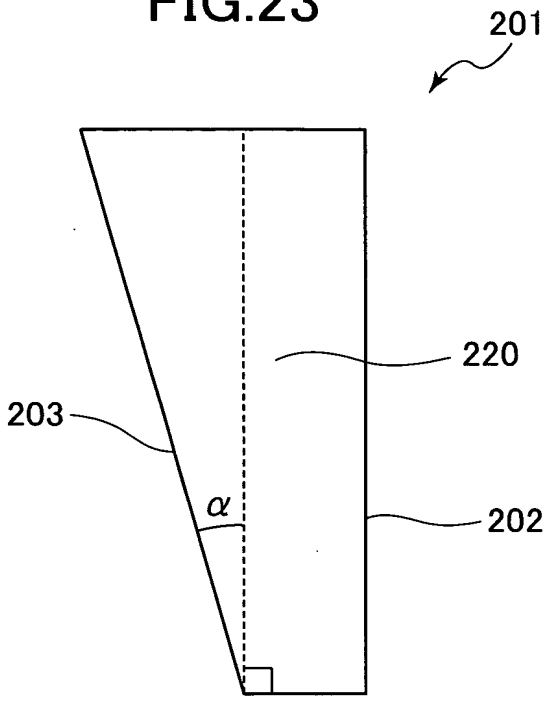

FIG.24

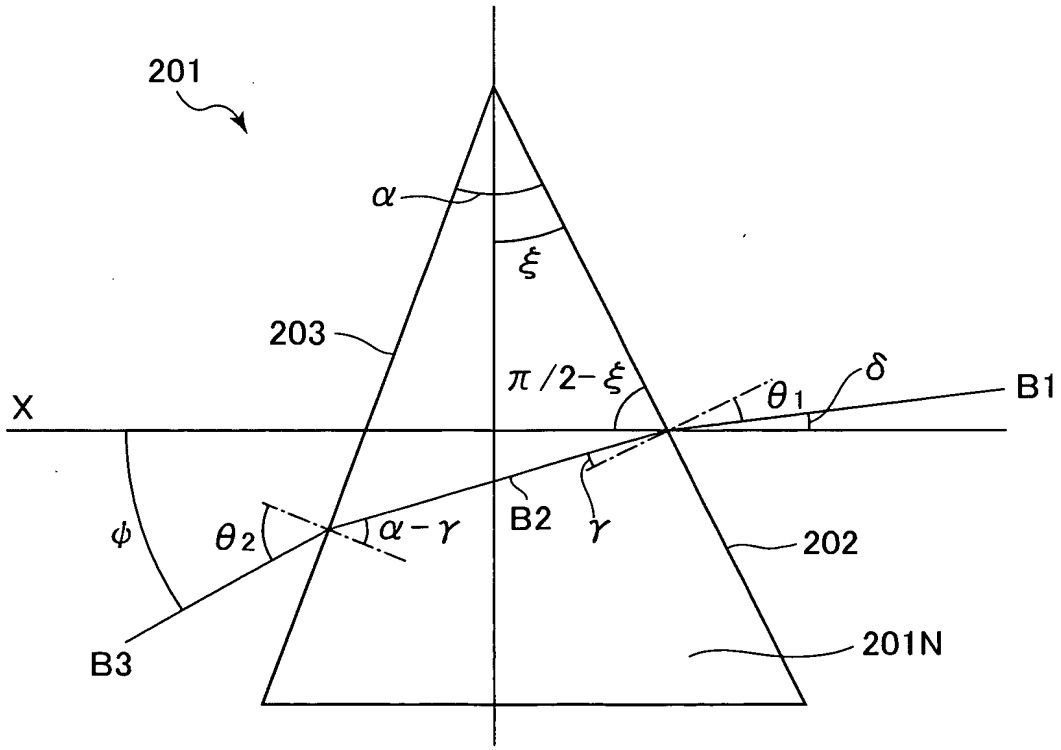

FIG.25

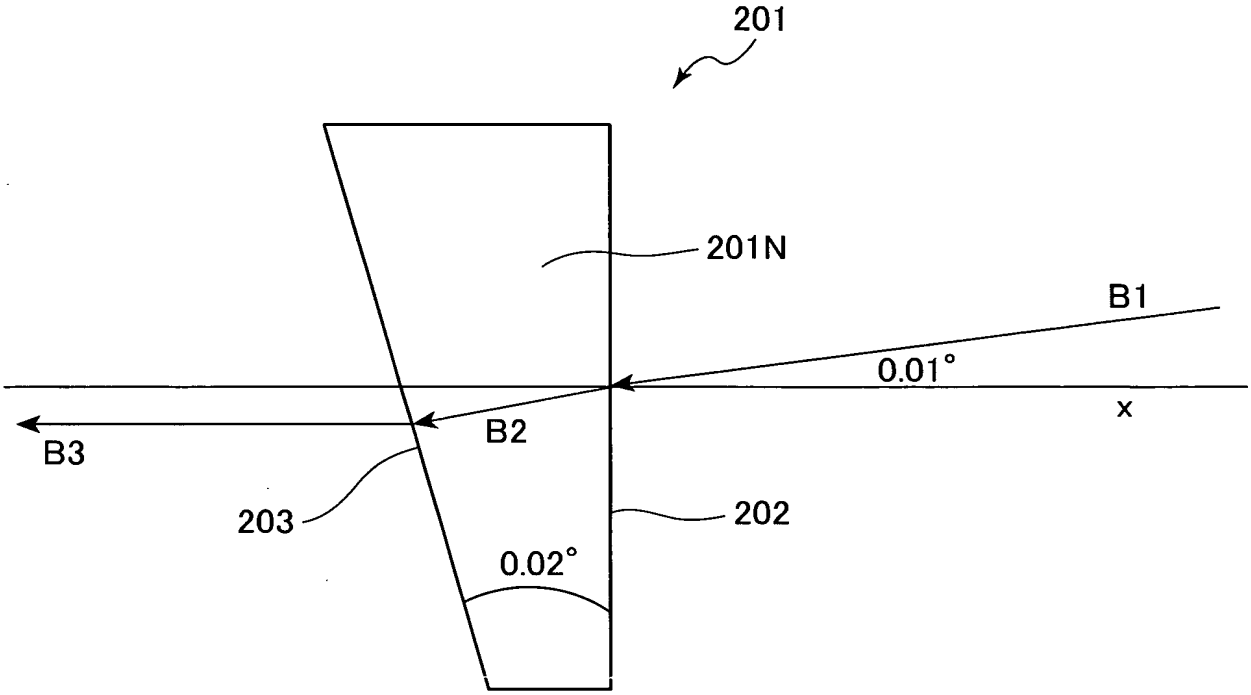
201
201N
B1
0.01°
x
B2
B3
203
202
0.02°

FIG.26

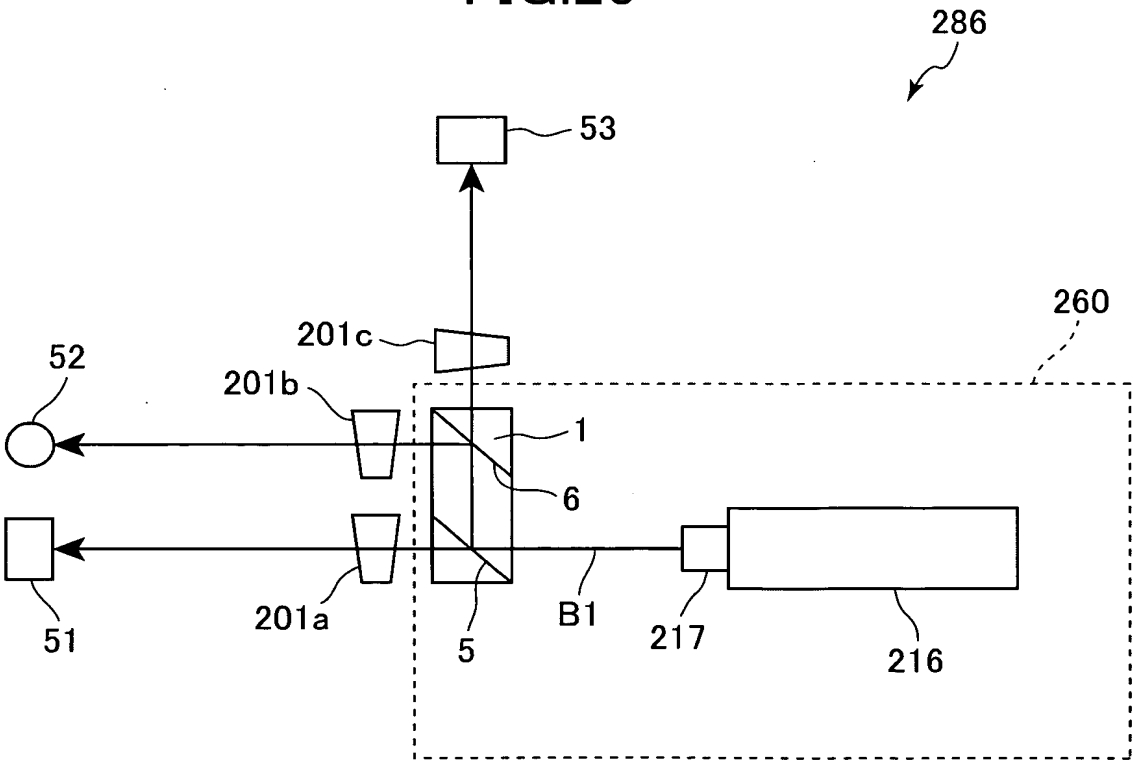
286
53
260
201c
52
201b
1
6
51
201a
5
B1
217
216

FIG.27(a)

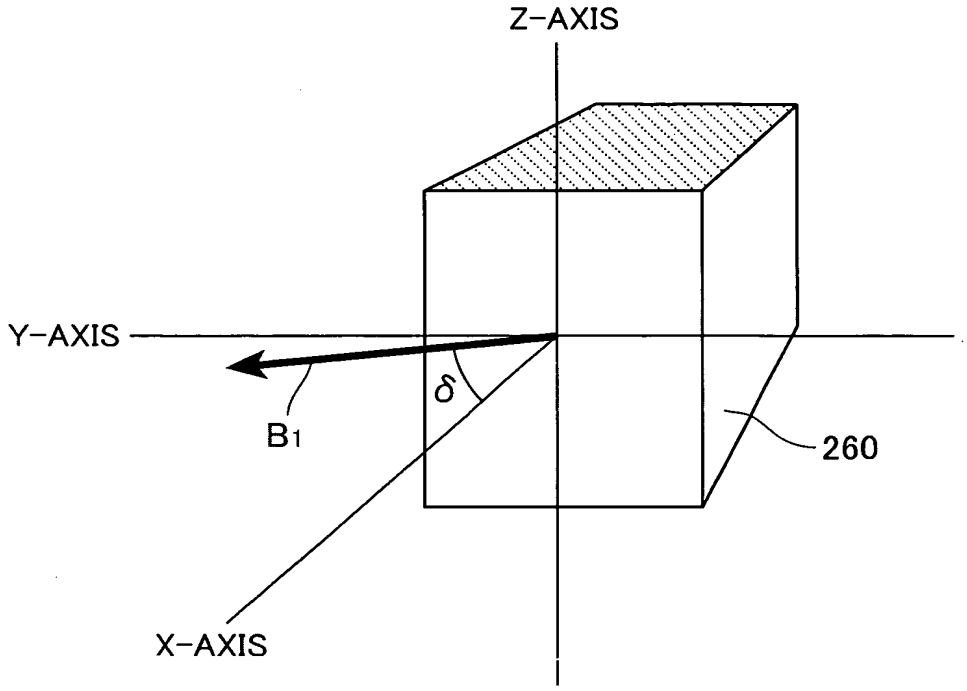

FIG.27(b)

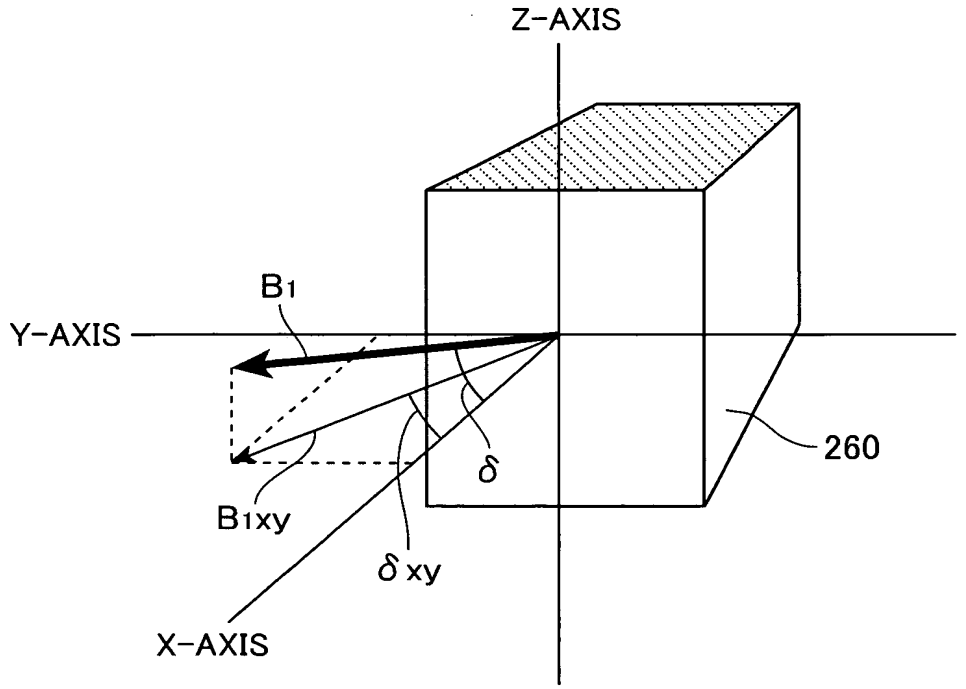

FIG.27(c)

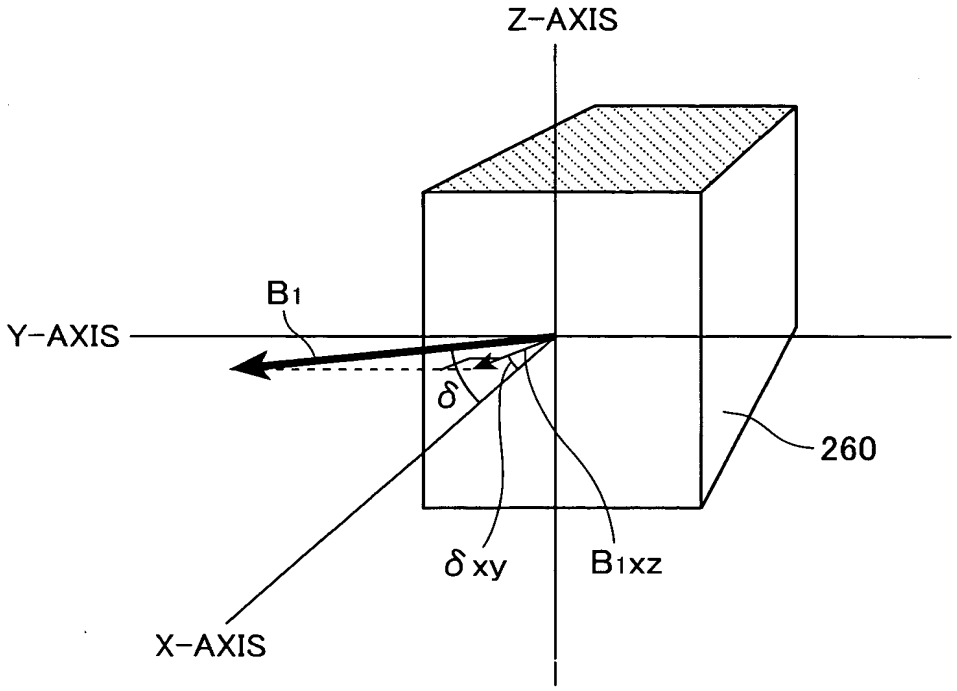

FIG.27(d)

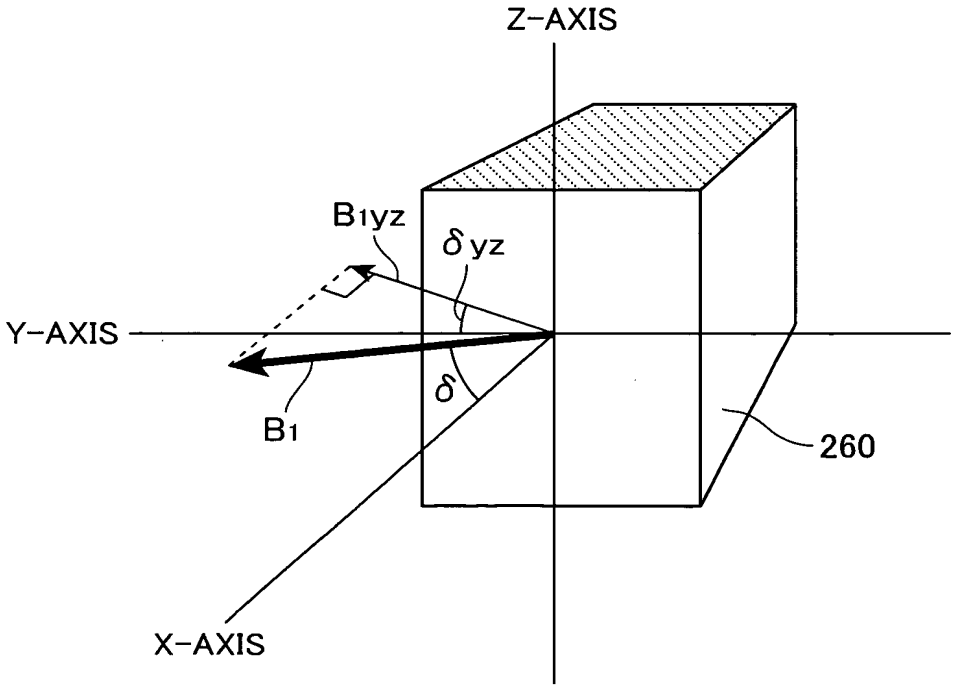

FIG.28

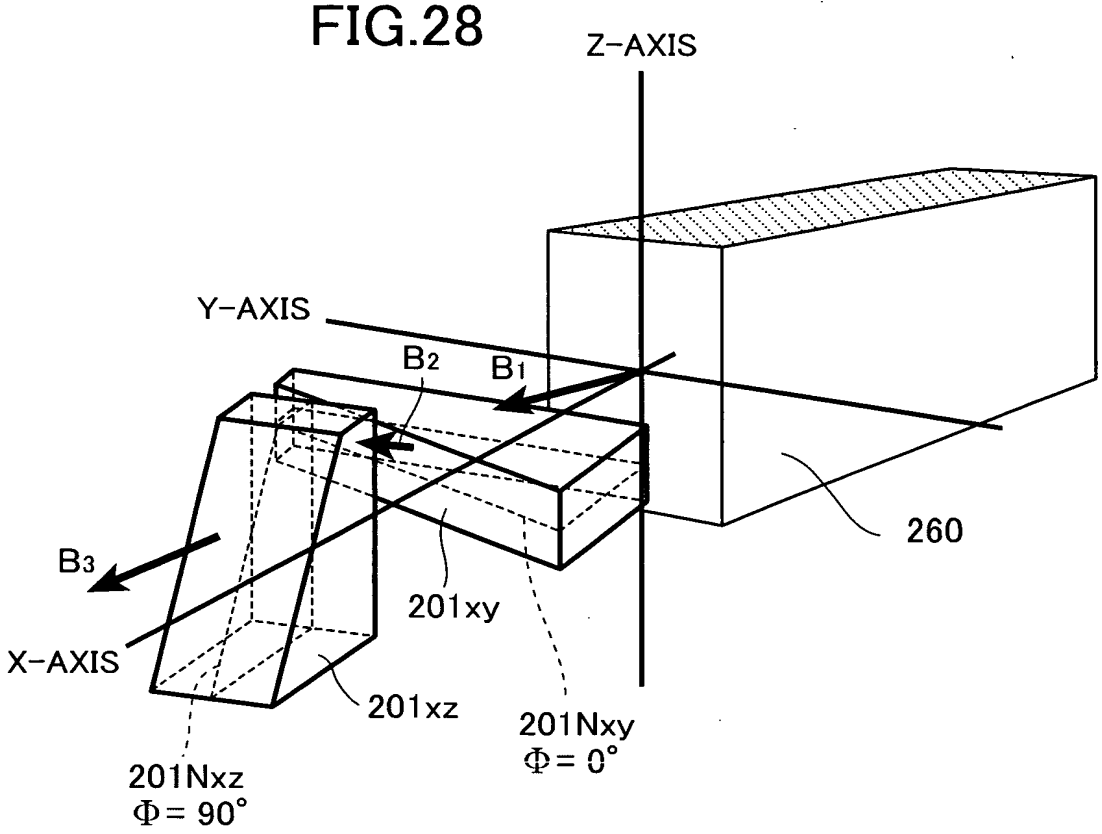
Z-AXIS
Y-AXIS
B2
B1
B3
X-AXIS
260
201xy
201xz
201Nxy
Φ= 0°
201Nxz
Φ= 90°

FIG.29

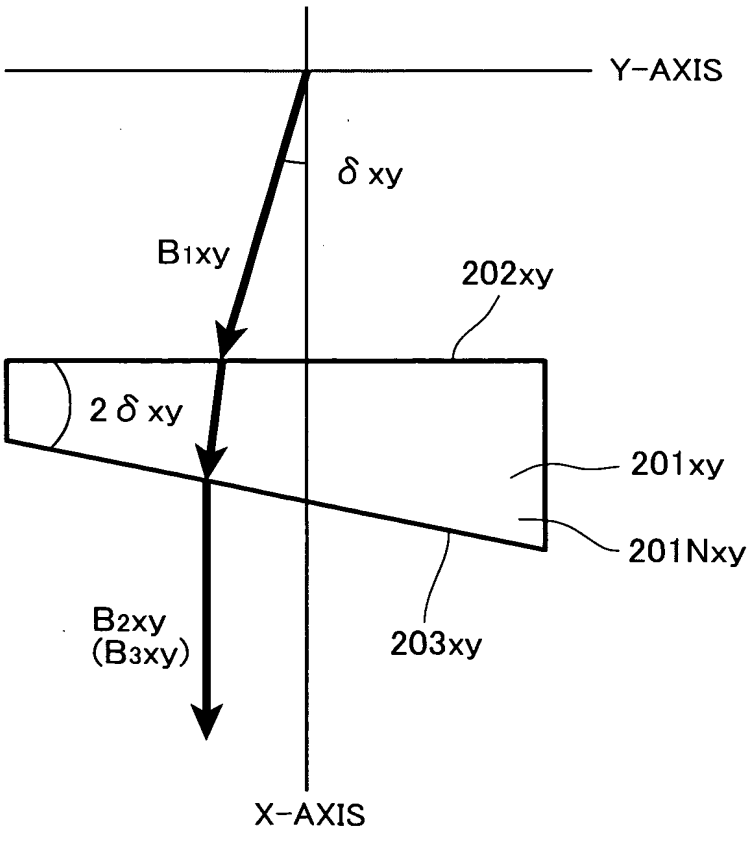
Y-AXIS
δ xy
B1xy
202xy
2 δ xy
201xy
201Nxy
B2xy
(B3xy)
203xy
X-AXIS

FIG.30

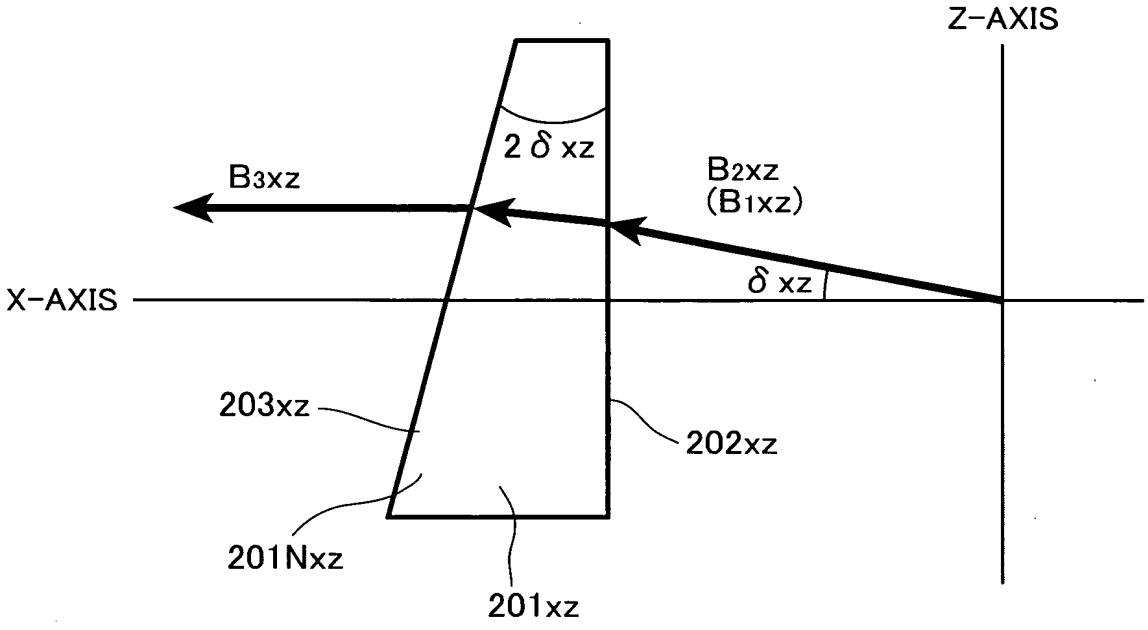
Z-AXIS
2 δ xz
B3xz
B2xz
(B1xz)
δ xz
X-AXIS
203xz
202xz
201Nxz
201xz

FIG.31

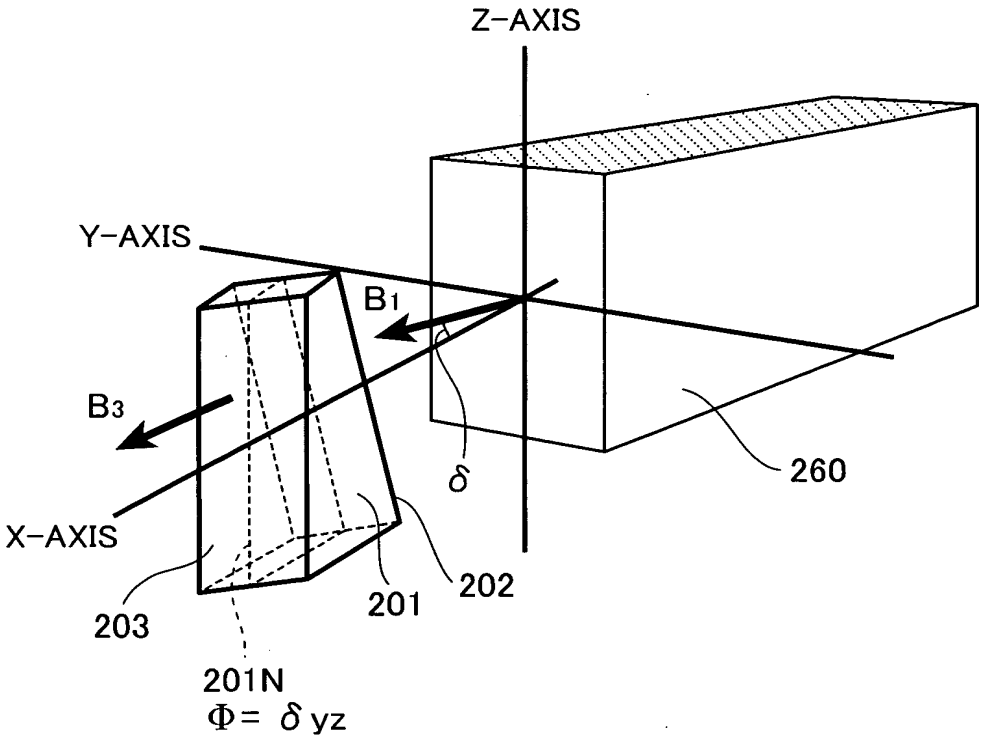
Z-AXIS
Y-AXIS
B1
B3
δ
260
X-AXIS
203
201
202
201N
Φ= δ yz

FIG.32

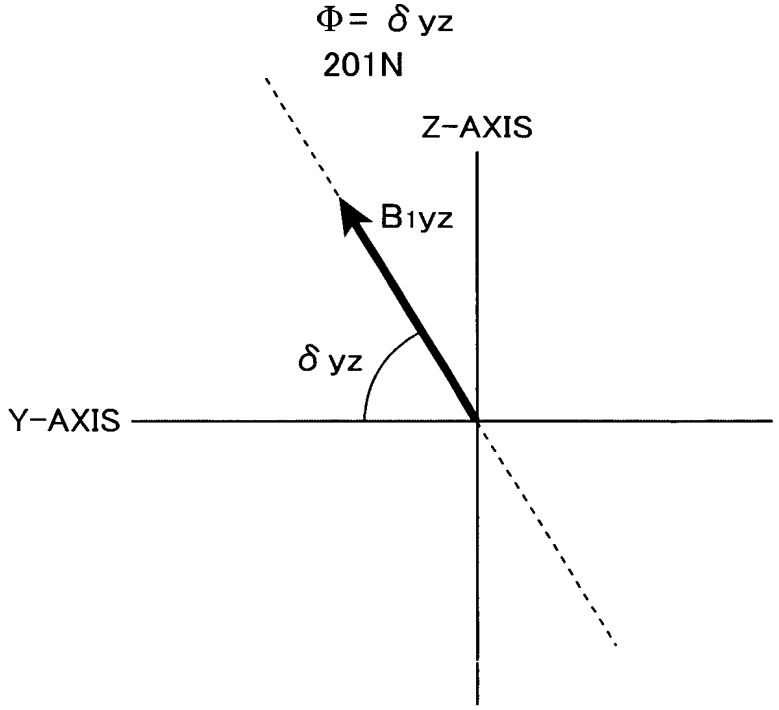
Φ= δ yz
201N
Z-AXIS
B1yz
δ yz
Y-AXIS

FIG.33

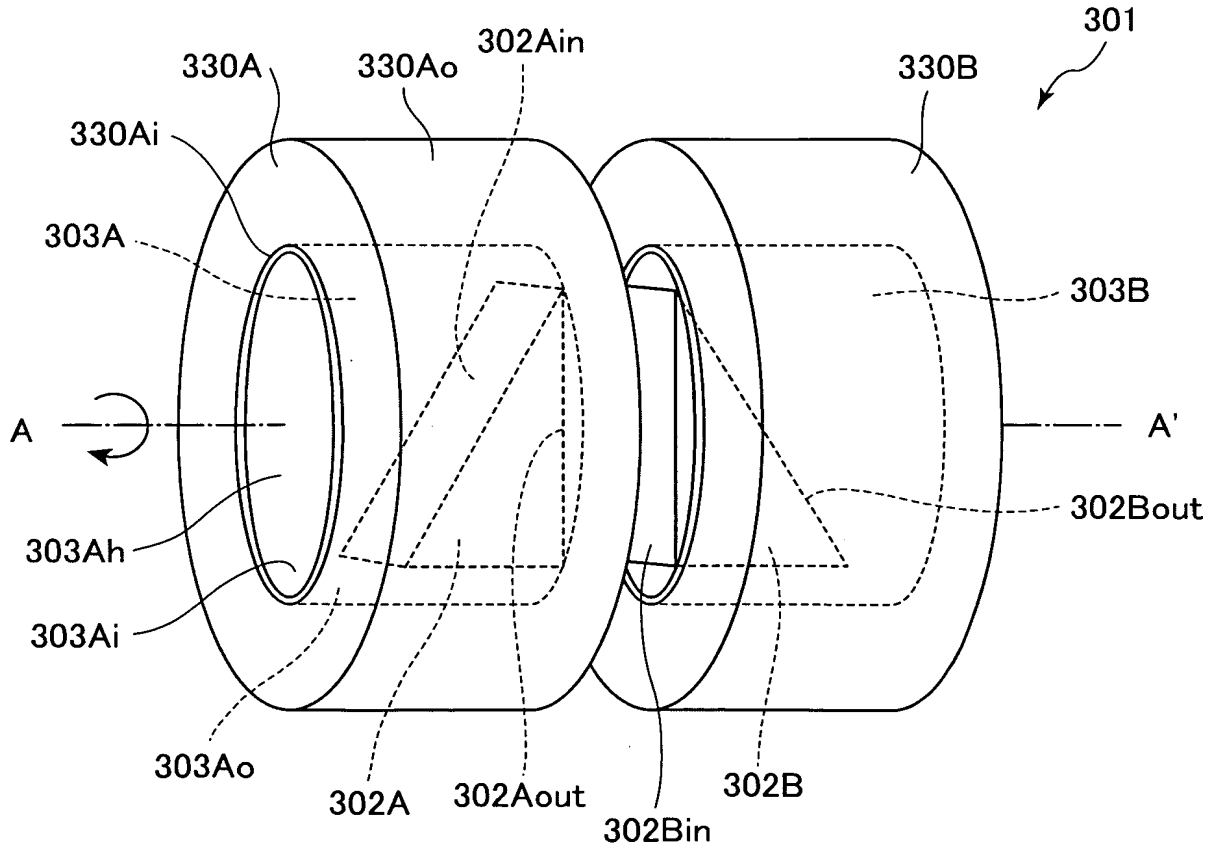
301
330A
330Ao
302Ain
330B
330Ai
303A
303B
A
A'
302Bout
303Ah
303Ai
303Ao
302A
302Aout
302Bin
302B

FIG.34

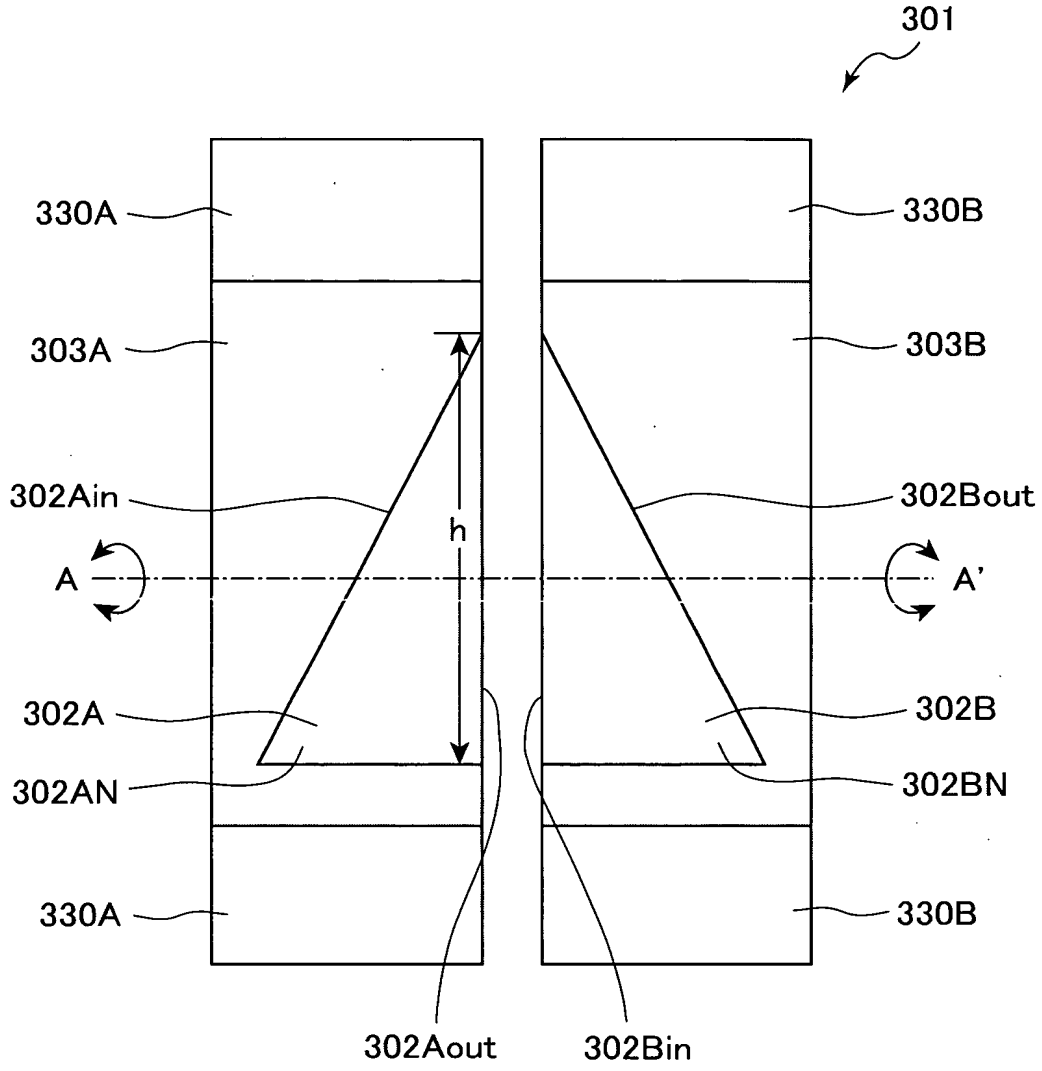
301
330A
330B
303A
303B
302Ain
302Bout
h
A
A'
302A
302B
302AN
302BN
330A
330B
302Aout
302Bin

FIG.35

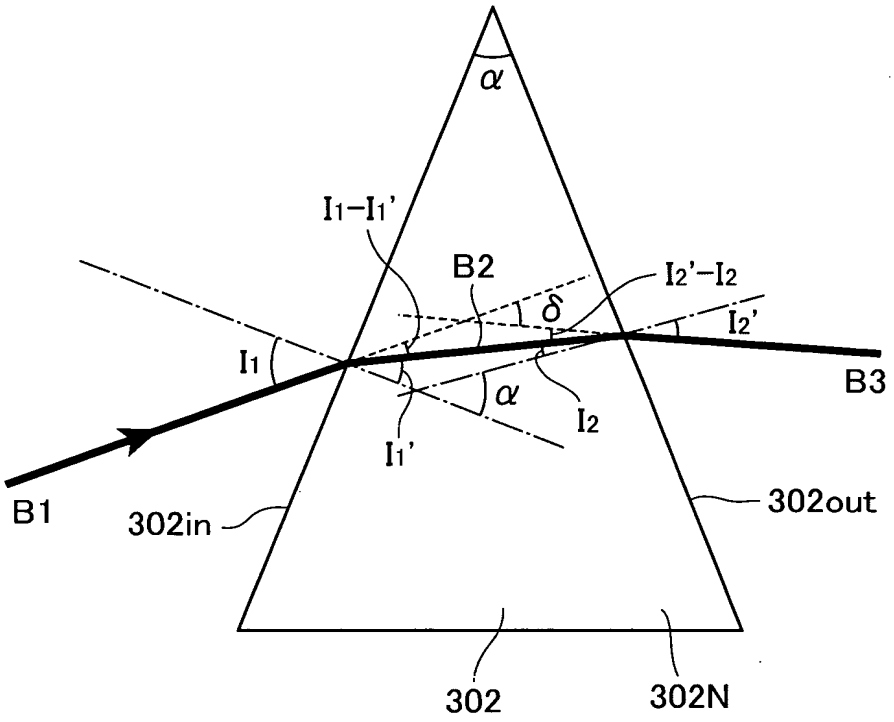
α
I1−I1'
B2
I2'−I2
δ
I2'
I1
B3
α
I2
I1'
B1
302in
302out
302
302N

FIG.36

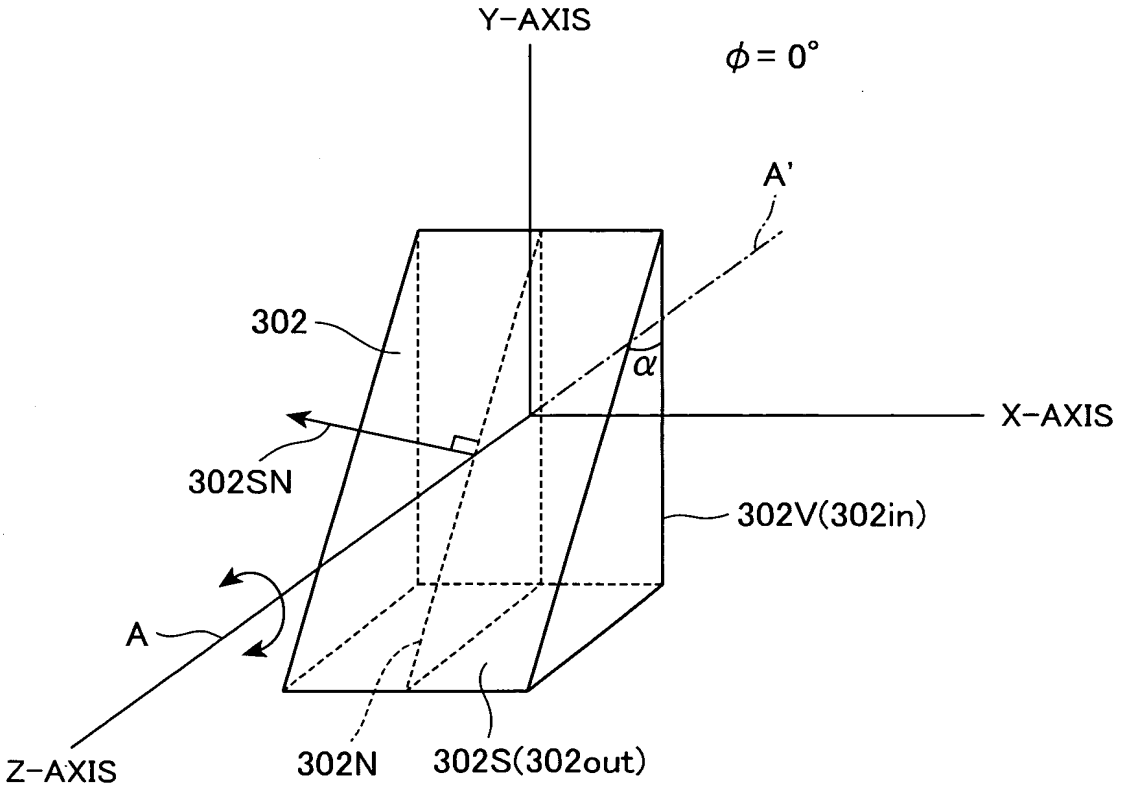
Y−AXIS
ϕ = 0°
A'
302
α
X−AXIS
302SN
302V(302in)
A
Z−AXIS
302N
302S(302out)

FIG.37

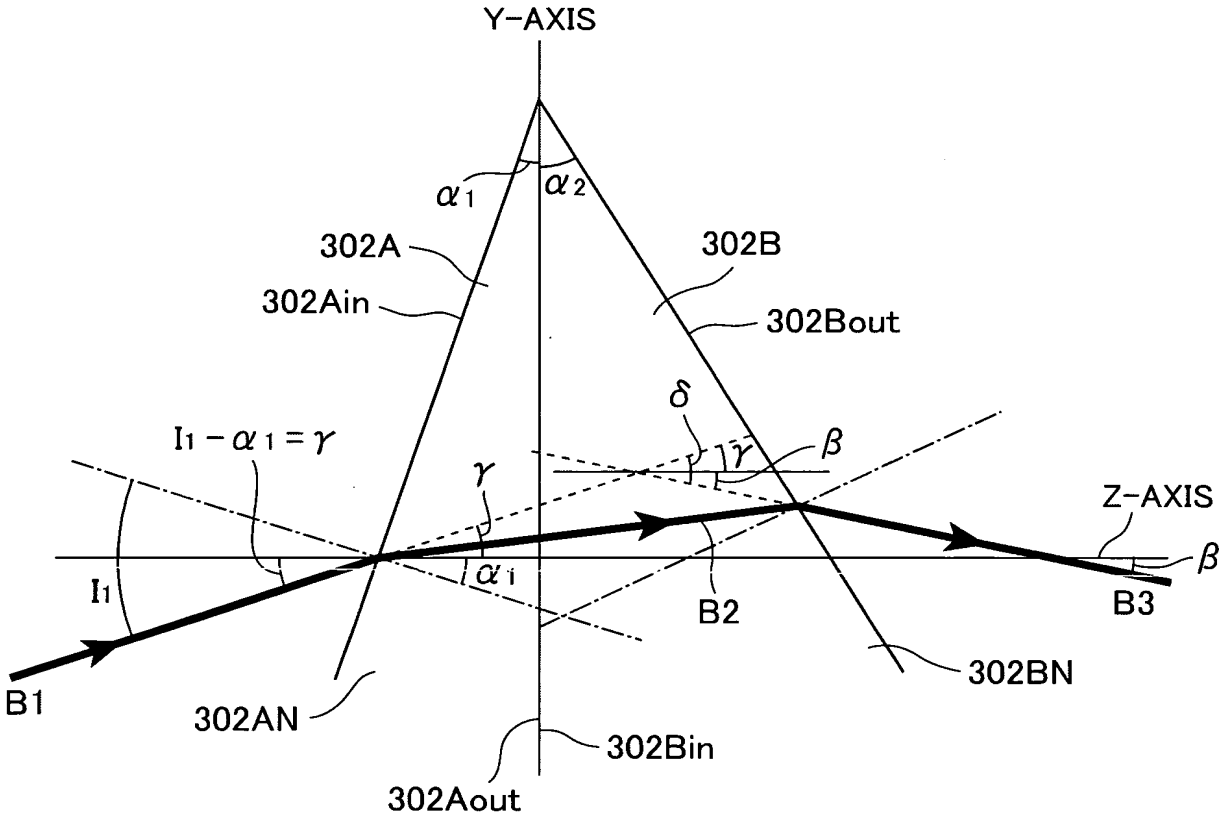
Y-AXIS
α1
α2
302A
302B
302Ain
302Bout
δ
I1 − α1 = γ
γ
β
Z-AXIS
β
I1
α1
B2
B3
B1
302AN
302BN
302Bin
302Aout

FIG.38(a)

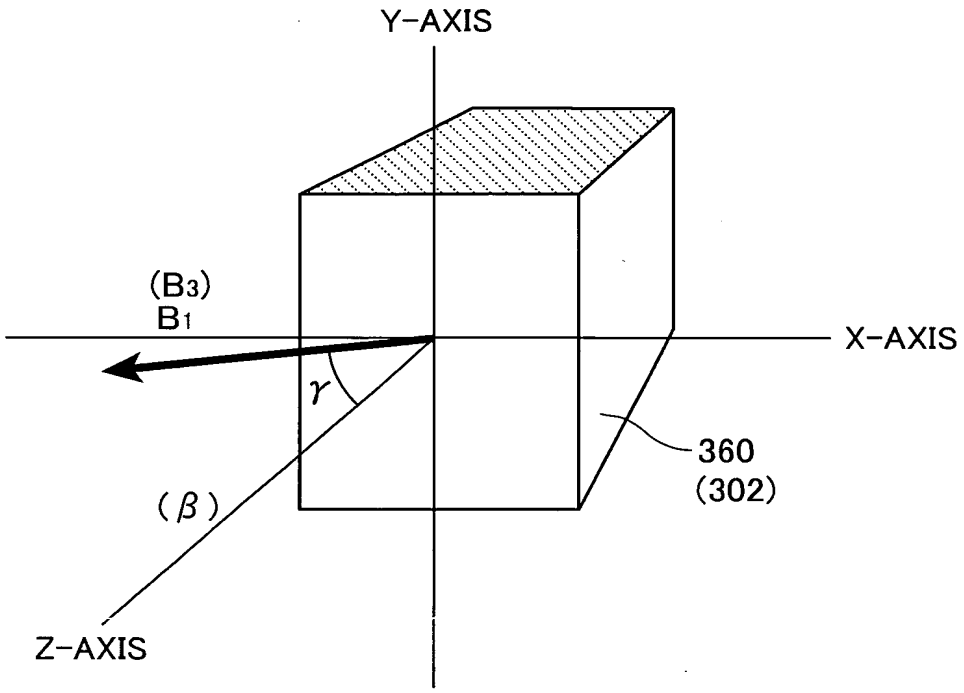

FIG.38(b)

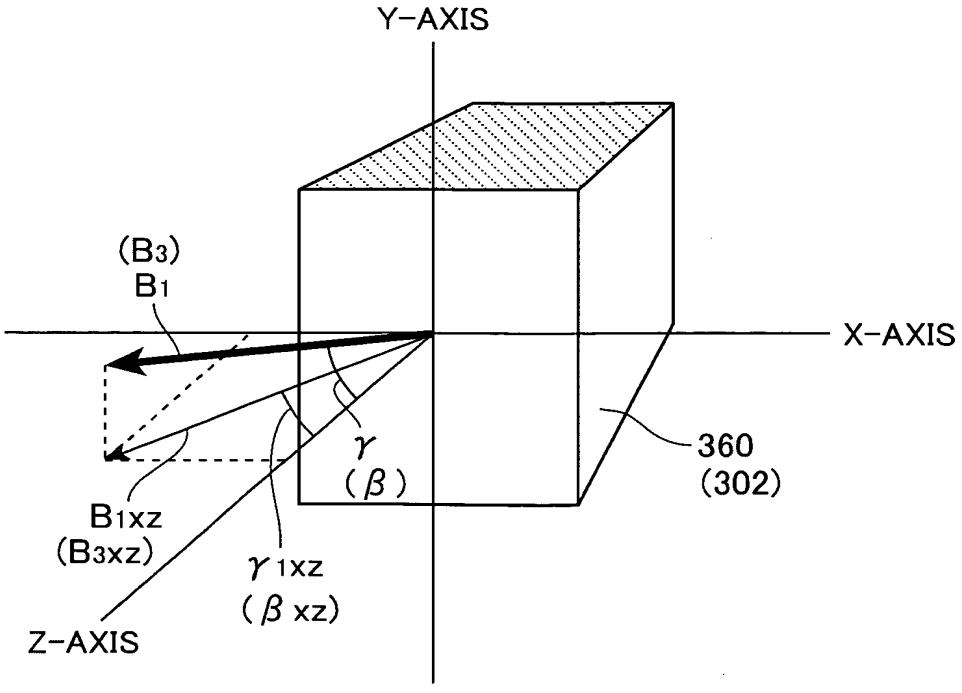

FIG.38(c)

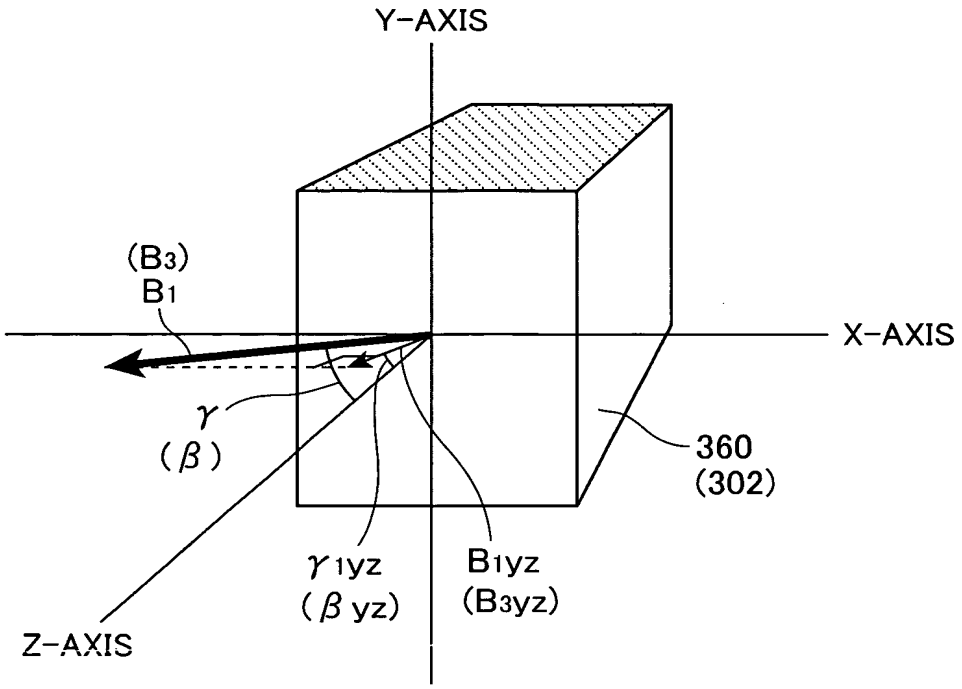

FIG.38(d)

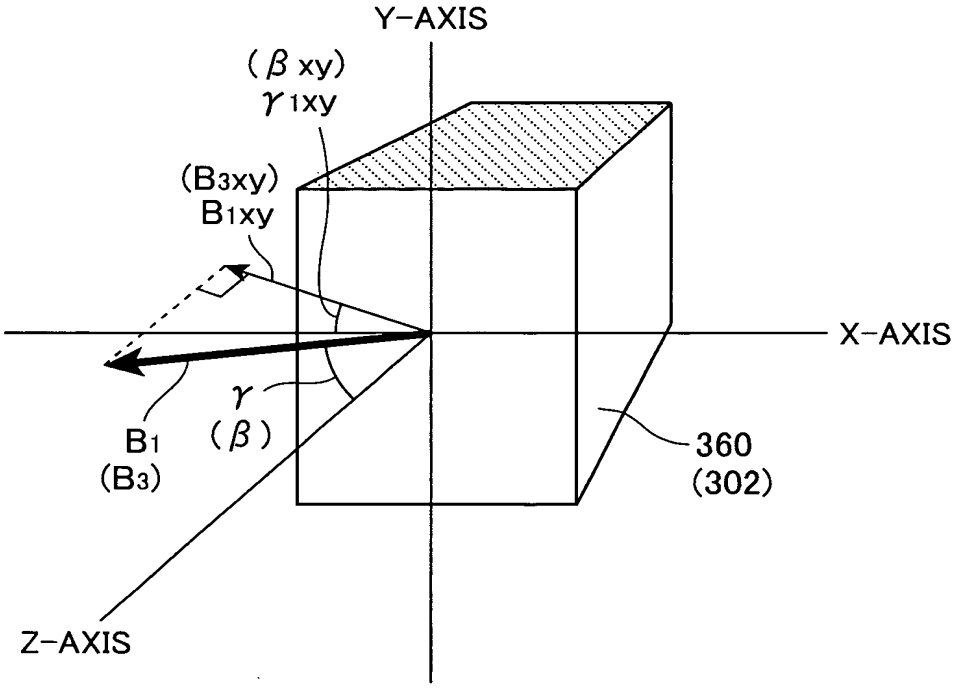

FIG.39

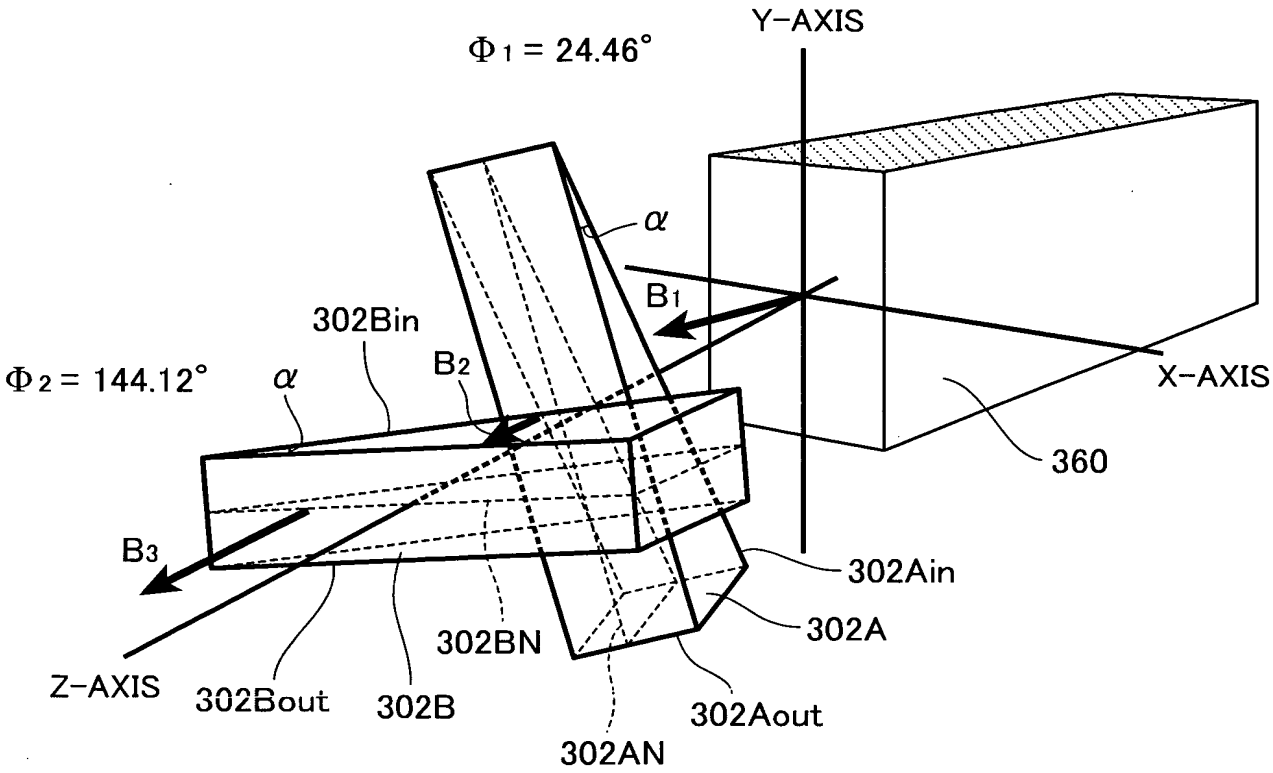
Y-AXIS
Φ1 = 24.46°
α
B1
302Bin
B2
Φ2 = 144.12°
α
X-AXIS
360
B3
302Ain
302A
302BN
Z-AXIS
302Bout
302B
302Aout
302AN

FIG.40

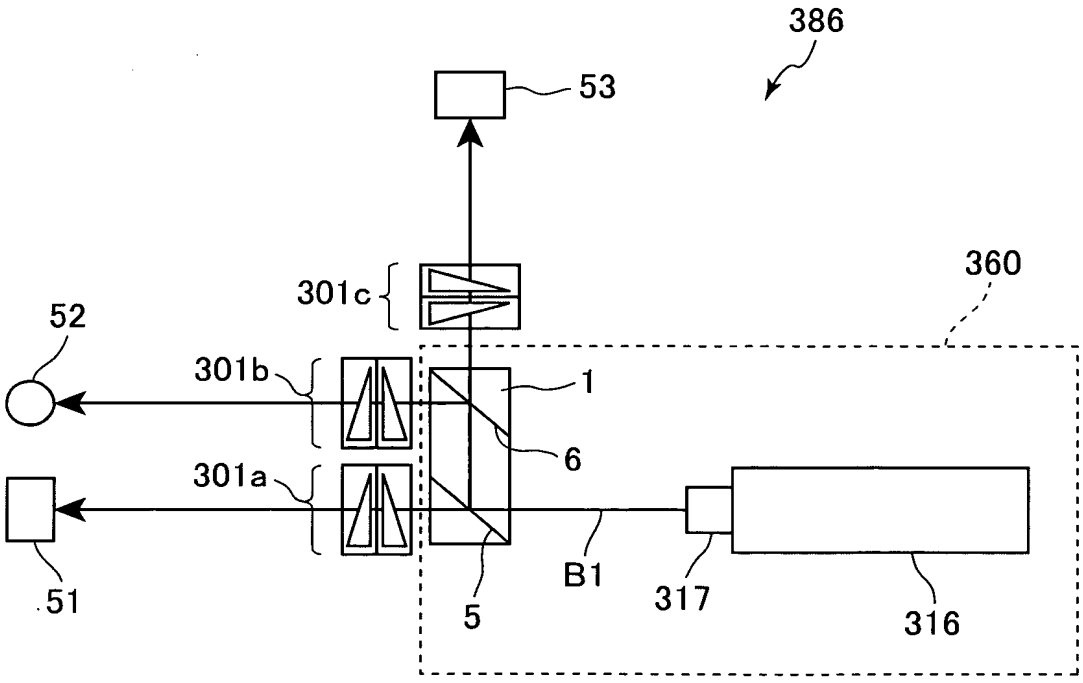
386
53
360
301c
52
301b
1
6
301a
51
5
B1
317
316

FIG.41

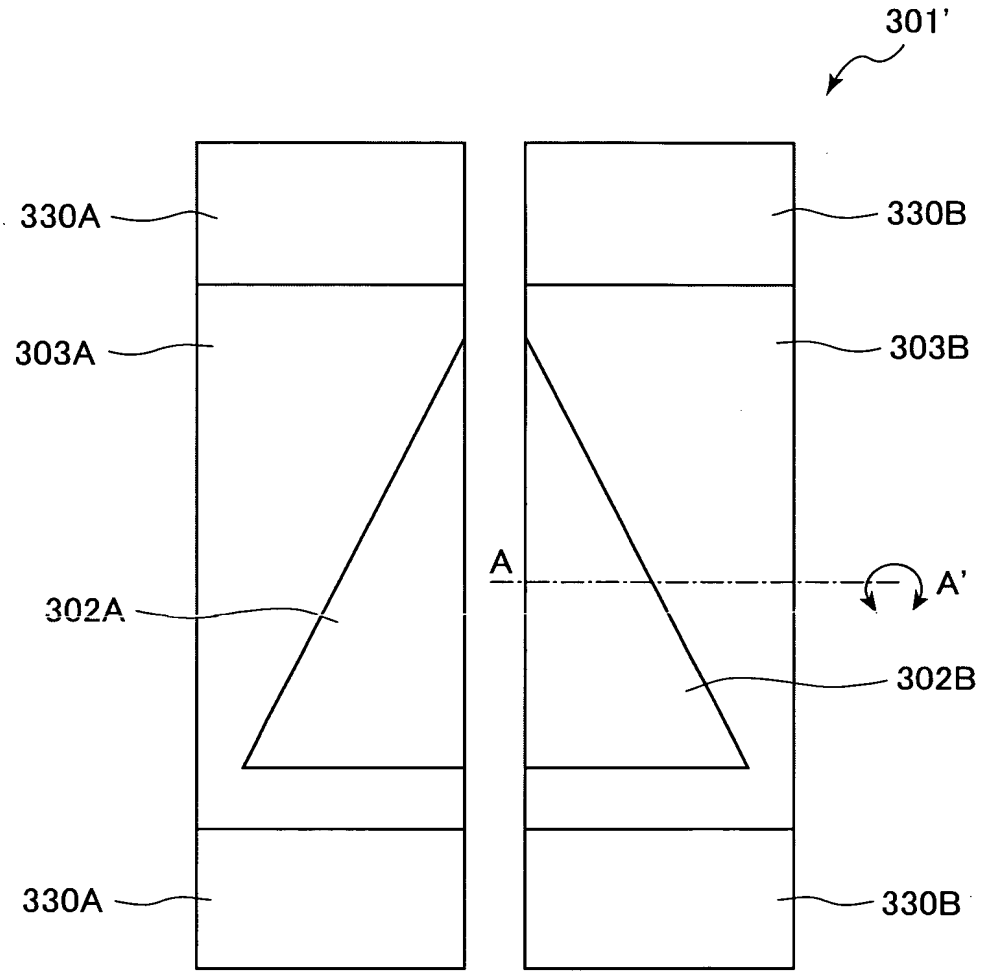

FIG.42

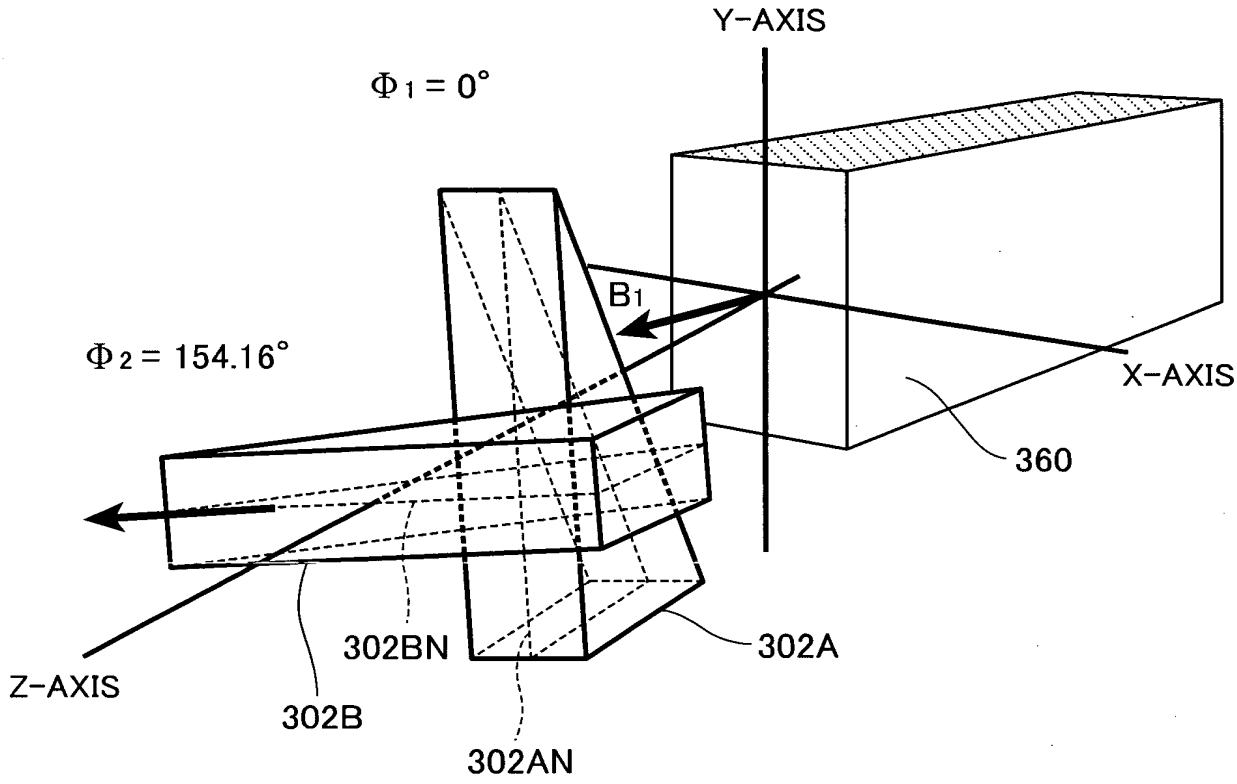

FIG.43

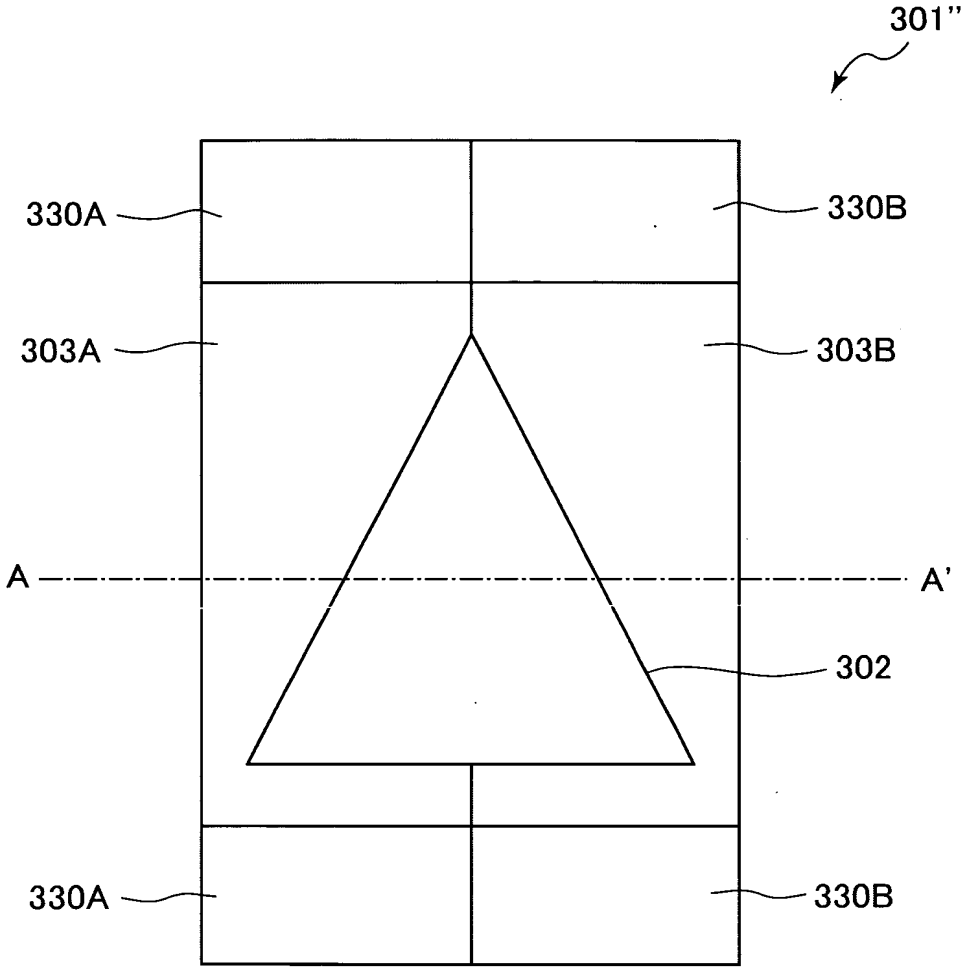

FIG.44

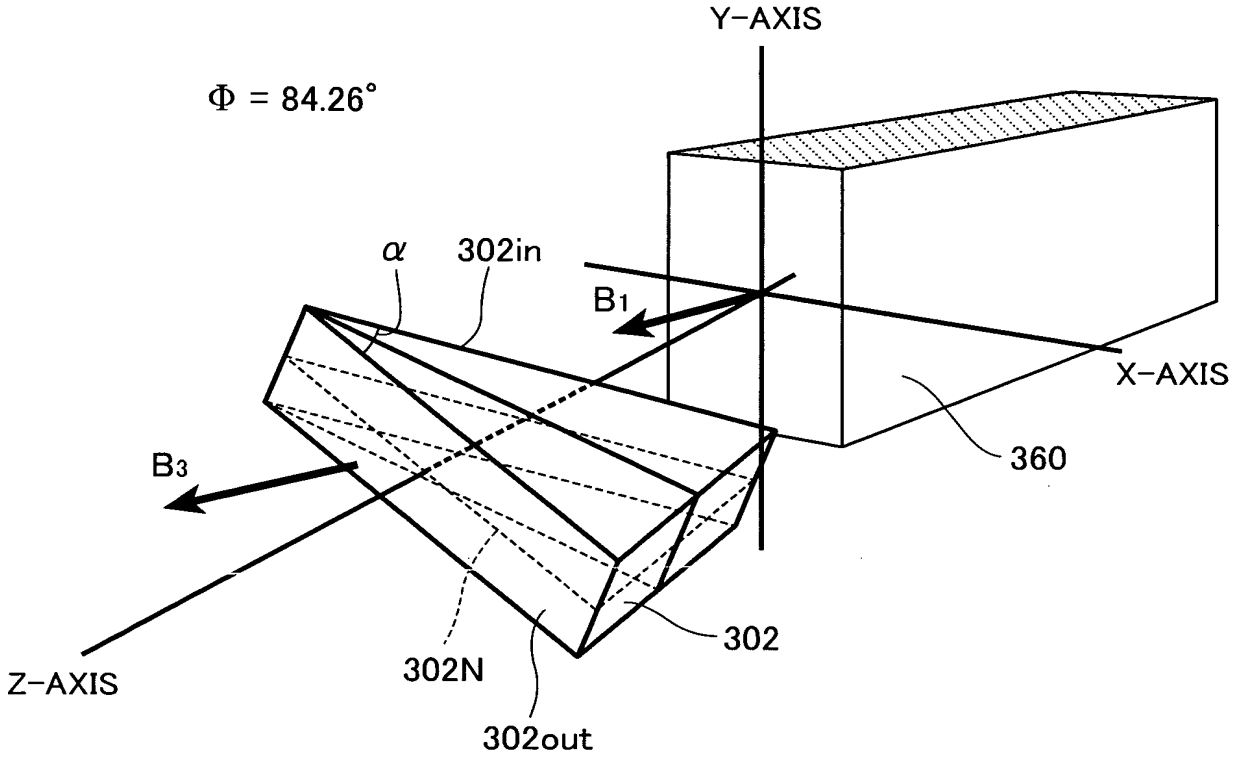

FIG.45(a)

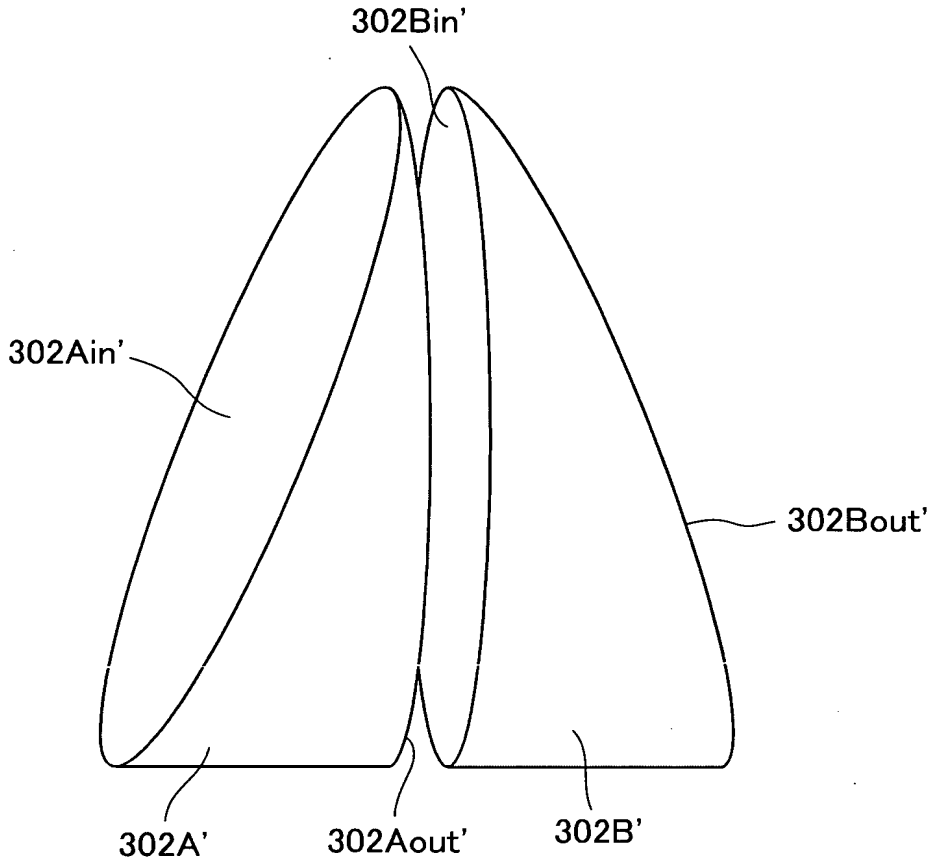
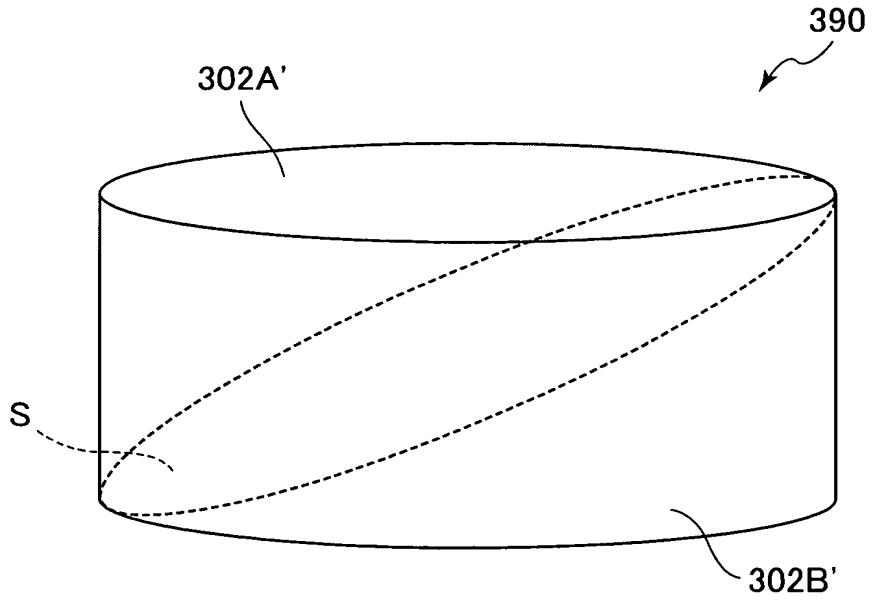
FIG.45(b)